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OF THE

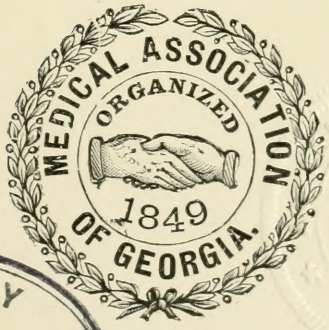
MEDICAL ASSOCIATION

OF

GEORGIA

FORTY-EIGHTH ANNUAL SESSION

1897



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"Resolved, That this Association shall not be considered as indorsing views of authors of papers published in connection with the Transactions, unless definitely so indorsed in the Proceedings of the Association.

"Resolved, That the above resolution appear annually upon the title page of our published Proceedings"

Transactions 1873.

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MINUTES

OF THE

Medical Association of Georgia.

Forty-eighth Annual Session.

FIRST DAY—MORNING SESSION.

MACON, GA., April 21, 1897.

The Association met in the Academy of Music, and was called to order by the President, Dr. Geo. H. Noble, of Atlanta, at 10 a.m.

Divine blessing was invoked by the Rev. F. M. Reese, of Christ Church.

At the conclusion of the prayer, Dr. W. F. Holt, in behalf of the resident members of the Association, delivered the following

ADDRESS OF WELCOME.

Mr. President, Ladies and Gentlemen of the Medical Association:

As the representative of the Macon Medical Society and in behalf of the Committee of Arrangements, the pleasing duty has devolved upon me of extending to you a cordial and hearty welcome to our city and our homes. In this welcome there is a depth of meaning more significant even than that usually extended by the hospitality of this city of ours to her visiting friends, for the city of Macon claims the proud distinction of being the birthplace of the Medical Association of Georgia. Here strong hearts watched by the cradle of this favorite child, and with fond hopes and

earnest prayers saw it take its first tottering steps, and wished it Godspeed in its struggle toward a mighty life. To-day Macon welcomes once more her own mighty offspring, and in this welcome there rings a clarion note of fond pride and gratified ambition. [Applause.]

Forty-eight years, with their changes, have passed on, each one marked by the steady growth and advancement of the State Association; its members, with feet firmly planted upon principles of integrity and honor, with a love of science and humanity which stood undaunted before any and every sacrifice, have attained exalted positions, both at home and abroad, and the salutary influences of less prominent but equally heroic and lofty lives live in the hearts and memories of the people of Georgia.

In epidemics that brought devastation and death to our State and our land—epidemics that caused the stoutest hearts to quail and tremble—our profession, regardless of personal risks and sacrifices, have always been among the first to volunteer their services, and hand in hand with the servants of God and the noble women of our country, have stood ready and willing to give their services, their counsel—yea, their lives—to aid suffering humanity and avert danger and death.

Thanks to the rapid strides of medical science, aided by the intelligent co-operation of national and state legislation, these dark pages in the world's history grew rarer and brighter.

Eight years have passed since we had the pleasure of greeting you—a long time to wait, but the waiting only gives us larger arrears of welcome to extend to you and a hospitality more cordial and sincere. But, gentlemen, in my eagerness to tell you how glad we are to see you—how welcome you are to all that we have to offer you—I am selfishly keeping you from the literary treat that I can safely promise is in store for you in the address of welcome in behalf of the city of Macon by one of our distinguished legal representatives, whom I now take great pleasure in introducing to you—Hon. N. E. Harris. [Applause.]

ADDRESS OF WELCOME BY HON. N. E. HARRIS.

Mr. President, Members of the Association, Ladies and Gentlemen:

I have been appointed, in behalf of the corporation of the city of Macon, to welcome to our midst this convention of physicians and surgeons. The last Democratic president, while the robes of his office were yet upon him, did not consider it beyond his province twice to do what I am now here to attempt. I ought, therefore, to esteem the task both a pleasure and an honor.

Political conventions, charged with deciding the ultimate destinies of public men and measures, have often met in this hall; business conventions looking to the encouragement of new enterprises, the launching of new schemes of development and putting into operation new ventures for elevating the country and aiding in the march of improvement, likewise have met here; social conventions, having in view the purpose of securing closer relations between labor and capital, between the great barons of commerce on the one hand and the middle orders who constitute the common gentry of trade on the other—all these have gathered here in times gone, that their members might commune with each other and lay out plans for the future campaigns of the century, yet I think that no convention ever met at this place which touched more intimately the well-being of society or affected more deeply the destiny of the human race as comprehended in the preservation and improvement of the great physical forces of life, than does this medical association which gathers here to-day.

I rejoice, therefore, gentlemen, to welcome you to our midst.

You come to us having in your possession already the pass key that unlocks the door of every home in the land—your membership in your profession—for it is certain that no dwelling can long remain closed against the doctor; yet I think Macon is especially glad to receive your visit to-day, both on your own account and hers, because the presence of so many of the great healing profession accentuates her own healthfulness as a city. While she has experienced sickness and disease enough in her midst to keep her own physi-

cians in easy and sometimes luxurious style, yet she is proud to say to-day that their skill and intelligence, added to our own climatic surroundings, have enabled them to cure nearly every patient to whom they have been called, and absolutely to give her the third lowest death-rate in proportion to population in all these United States. [Applause.]

I do not know whether our doctors are always to be congratulated on this state of affairs. I remember to have heard a gray-haired physician complaining once about the law applicable to the collection of physicians' bills. He said that if the patient got well the doctor ran the risk of having great trouble to collect his bills, but if his patient died, then the law gave him the highest lien on the estate, and he was certain to be paid. This appeared to him like a premium offered to unsuccessful treatment—not the first anomaly in the law which by seeking to protect life seems to expose it to increasing dangers.

But the lawmakers trusted the honor of the profession, and I have never heard of an instance where the trust was betrayed.

The State has been careful of her medical profession, in this respect presenting a sharp contrast to the conduct of several other commonwealths in the government.

This convention, on first thought, would not imagine there was any very striking resemblance between the physician and the lawyer, I am sure, and yet the parallel is not without interest. As I am a member of the legal profession, I may be pardoned for calling your attention to some features common to both.

1. Did you ever reflect that the doctor will take the worst case in the world, when called to it? So, too, will the lawyer, if he is certain to get his pay.

2. The doctor often loses his case, and so, too, unfortunately, does the lawyer.

3. Both thrive on the misfortunes of their fellow-men. Their happiness is in the misery of their clients or patients.

4. The worse scared the client or patient, the more pay the lawyer or doctor is apt to get.

5. People abuse both alike.

I heard a distinguished minister in the pulpit not a month ago, speaking of the two professions, call the doctors "two

by four pill-drivers" and the lawyers "two by three sap-headed barristers." I think the lawyers, however, suffer most in this respect. The Farmers' Alliance was organized to keep them out of office, and whenever you try to keep a lawyer out of office, the attack all along the line is bound to be vigorous, forcible and fiery.

No small guns will silence a ten-inch Columbia, not even a rapid-firing, breech-loading, six-inch rifle-gun.

6. The professions resemble each other somewhat in the demand for titles urged upon the public. I have often laughed to see these new fledglings, lately turned out by our medical colleges, stalking around without a single patient or a day's practice, rejoicing in the title of "doctor," which they claim from the suffering public. It is so allowed; but then you have laughed, too, when you have seen the slick breed of small would-be barristers, the younger the better, coming into your community and rejoicing in the warlike designation of "colonel," although they never had a case in the world and never commanded a corporal's guard. The younger they are in the profession, the more certain the public is to give them a handle to their names. Nevertheless, all things must have a beginning, and this is the way we all commenced.

7. The State requires a license of both these professions, the one to deal with your fortunes and the other with your lives.

8. And the State taxes both alike and gives the same exemptions to each, wisely forbidding these unsympathizing municipal corporations and county governments from laying their heavy hands upon them. The last legislature even went so far as to make it a misdemeanor for a lawyer or a doctor to practice his profession without the payment of his professional tax!

9. In morals the doctor fares best and the parallel ceases. Christ denounces the lawyer in the words, "Woe! Woe! unto you lawyers," although one of them by cross-questioning developed from the Saviour the great law of human brotherhood. By the way, I heard a military friend of this city remark recently that he didn't like to be asked by a lawyer to go to church, because Christ

had never given any commission to a lawyer to preach the gospel, either in public or in private. [Applause.]

But the Saviour himself was the Great Physician, and all who reach highest in the profession in healing become likest unto God.

In one particular your profession has a great advantage over the lawyers—your victims never reproach you like ours do for the loss of the case. Is it "because dead men tell no tales"?

But enough.

Has the science of medicine kept pace with the progress of the world? The *Lancet* a few days ago announced that after careful calculations recently made in England, it is found that the mean duration of human life has been increased during the last fifty years as much as four years for man and five years for woman. A generation, therefore, is now over thirty-seven years. The *Lancet* says this is entirely due to the medical profession. It specifies as the principal reasons the increased facilities for taking care of the young and the better knowledge of the laws of health as applied to the earlier stages of life. A larger number now pass successfully from infancy to manhood and womanhood than ever before. Suppose this should go on for five hundred years; all people born in the world would live out their allotted time.

The laws of health are being taught as they never were before, and the secrets of nature are daily wrung from her cabinets of rock and vegetable to pay tribute to man's wants for relieving pain and securing health. An educated physician is to-day a walking arsenal, a wonder and a mystery. He is entitled to be looked upon in some such light as the Indian looks upon his medicine man.

So jealous is your profession of all helps in the practice that no new discovery is made without at once attracting the attention and commanding the interest of your learned men. Great brains are laboring on independent lines with the problems involved in the preservation of human life. The discoveries of science intended to add conveniences to life would amount to very little if life itself were not preserved. Consequently every age of knowledge is being harnessed to the car of Æsculapius. The evolution

and disclosure of the hidden laws in the domain of physical phenomena, the unveiling of nature's profoundest mysteries, the location and definition of all her wonderful agencies are made tributary to the work of the physician and the surgeon. Who can estimate the effect which that wonderful spark from the Crookes tube, giving birth to the Roentgen ray, is destined to have on the future practice of medicine and surgery? It has already revolutionized the diagnosis of disease and opens a thousand unknown avenues for its treatment and cure in the future. The splendors which hang about the names of Paul Eve, of Sims and of Westmoreland, our own peerless Southern physicians and surgeons, may be dimmed by the careers of many young men who are in this audience to-day, under the new régime destined to commence at the opening of the coming century. There is nothing too hard for the profession. [Applause.]

As the physician develops under that great law of the survival of the fittest, the demand of the times will produce men best suited to grapple with the truths of the profession and carry it forward to the highest possible development.

One of the former presidents of your medical association tells a story to illustrate the methods pursued in the healing art in former generations. In these early times the motto was "kill or cure," and one or the other was pretty apt to result. An old quack doctor who lived near Griffin manufactured for himself an ivory ball containing eight or ten facets or sides, upon which sides were written certain remedies thought to be effective in certain conditions of the body. He called the ball his tee-totum. When he was sent for to see a patient, he would take occasion to step aside in some quiet place where he was not seen and toss his ball up in the air. As one of the sides stood upward he read what was on it and used the remedy for the sick patient. He achieved wonderful success. On one occasion he was called on to attend a gentleman who had swallowed a fish bone that had lodged in his throat. This was beyond the reach of the old gentleman's skill, as he had never prescribed for a fish bone, but he went out into the garden and taking his ball threw it up into the air.

When it came down he read on the face that turned up, "Mush poultice on the soles of the feet." Accordingly he went in and told the gentleman's wife to prepare a mush poultice and put it on the soles of her husband's feet. When the sick gentleman heard his prescription he was so overcome with the ridiculousness of the idea that he began to laugh very heartily, and in laughing coughed up the bone. The old doctor threw his hat up in the air and exclaimed: "The tee-totum forever; it has never failed yet." [Laughter.]

The profession has passed beyond this stage, I am proud to say.

You call your ancient practitioners "old fogies" now, you brilliant young lights who are just from the halls of our splendid universities. But I will be sorry when the old race is dead. They have constituted a noble body of our citizenship. Take the country doctor, who is fast becoming obsolete in these latter days of horseless carriages and bicycles and railroads which have brought the city and the country so close together. There is no class of our population for whom I have a profounder admiration than these old country doctors. I remember them as I saw them in my childhood, the friend of all classes, the friend of humanity. What braver men on earth have ever been known? They listen to no calls save that of duty. The night is never too dark for their journey, the day never too hot or stormy. With their lives in their hands they hasten at every summons to the bedside of physical pain—over swollen streams, through swamp marsh and rank grass, wet with the dews and dripping with the rain—in the forests where rank pools send out mephitic breath and the typhus lurks in its reeking home, or in the mountains where the cool breath of the north freezes the icicles on the beard and chills the marrow in the bones—always they go forth bravely and without hesitation at the call of duty to suffering humanity.

And so it is with the true physician everywhere. Perils by the road do not daunt him, perils by the storm cannot hold him, perils by robbers, by fire and flood only call up his manhood and set his duty in a plainer light before his eyes. Into the dens of fever, into the regions of infection he goes like a minister of heaven, carrying relief from pain

and from physical suffering to the wan and pinched victims of disease. No thought of compensation ever stays his footsteps or even hastens his coming. He is the accredited ambassador from the palace of health, and in his hands he bears the torch of comfort to the weary and the heavy laden, while his evangel is to the lowly as well as to the exalted in station and life. [Applause.]

Self-sacrificing heroes ye are, in the mighty army of benevolence, who shall write the history of your deeds or picture your unfaltering devotion to the suffering children of humanity? How many of these brave men like those I have described live obscure lives and die unknown and fill the humble graves of our lands, whose deeds of love, charity and self-devotion, if they were gathered up, would blazon the pages of humanity's record with a glory that would not pale before the splendors of all the war-laurelled heroes of earth, or lose a single ray in the glory of the mightiest chieftains that ever led the armies of nations to conquest and to victory.

"So it is with your noble profession, my friends;
And so it will ever be still;
There are some who appreciate its labors,
And some, perhaps, who never will.

"But in the great time that is coming, when loudly the trumpet shall sound,
And they who have labored and rested shall come from the quivering ground;
When they who have striven and suffered to bless and ennoble the race
Shall march at the front of the column, each one in his Godgiven place,
As they pass through the gates of the city, with proud and victorious tread,
The doctor, the surgeon and helper, will travel not far from the head."

[Applause.]

I suppose I was selected to deliver this address of welcome more on account of my relationship to the profession than for any power of expression or wisdom of thought pos-

sible to me. My father was a physician. Although he has long since left the earth, yet his life, as I look back upon it, is a benediction to me to-day as it was always to his family when he lived. His practice was scattered over the little county where I was born till he became an army surgeon and in the war passed the last years of his life. When I think of his untiring devotion to his duties, call back the memory of his ever cheerful face, his kindly heart always worn upon his sleeve, the easy prey of every one who wished to take advantage of him, his readiness to go at all hours of the night or day, in all kinds of weather, at the call of any one in pain or suffering, carrying his worn saddle-bags with the little store of medicines always at hand, replenished from time to time at the expense of his slender purse from the village drug store, keeping no record of his work save now and then a stray memorandum on the back of a letter or some fugitive piece of paper torn from a book, yet thankfully receiving anything his patients might pay him, healing more for the sake of the pleasure he got out of it than for the money that was in it; and then when I recall him, as I often do, bending over the sick-beds of his suffering patients, trying with all his skill to relieve them, in extreme cases sitting up through long weary nights watching the crisis of some awful malady, ready at any moment to take advantage of every favorable turn in the disease, or if his skill should prove all unavailing, speeding the souls of his patients out into the great unknown on the wings of his prayers, then tenderly closing the eyes of the dead and paying the last rites of sepulture, for the sake of those who survived; when I recall all these memories, looking in your faces to-day, I feel indeed how high and lofty is that profession which can produce such men as he will always be to me, and I thank God for the portrait that will ever hang on the walls of the heart's secret laboratory, where filial love is refined and sublimated through the alembic of God's mysterious processes of life.

In the name of the city of Macon, in the name of its mayor and council and of all its people, I welcome you to their hospitable homes and turn over to you the freedom of this Central City of your State. [Applause.]

Dr. Frank M. Ridley, of La Grange, made the following

RESPONSE TO THE ADDRESSES OF WELCOME.

Gentlemen:

In behalf of the Medical Association of Georgia, I accept your most cordial greeting. Such words of welcome are worthy of yourselves and of your beautiful Central City, whose great heart is filled with hospitality just as sunshine fills the day; just as beauty, color and perfume fill the rose.

We have met in your midst for the purpose of enhancing and advancing the grandest and most philanthropic of all the sciences. We have met for the perpetuation and unification of the strongest of fellowships. We have met in Macon because we admire it. We admire it for its thrift, its enterprise, its industrial and its educational institutions. We love it for its history.

Macon has a history of its own which should be preserved in enduring form. Your antecedents projected and established the first chartered female college in the world, which had the right of conferring degrees upon women. This even anticipated the memorable address of Daniel Chandler at the University of Georgia, and antedated a discussion of woman's rights in the British House of Commons. [Applause.]

Wesleyan Female College abides with you still. From its doors have gone forth and still go forth her daughters, who illumine the fairest pages of the history of this commonwealth. Mercer University, staid and tried, with a curriculum equal to any university of the land, continues to send forth her sons, who honor their alma mater, who honor themselves, their State, their nation. [Applause.]

Here was born and reared the gifted Sidney Lanier, in my humble judgment, with the single exception, Edgar Allan Poe, the greatest poet of the American continent. Here, gentlemen, not in Baltimore—but here beneath your turquoise skies, kissed by the breezes, redolent always with the perfume of your perennial flowers, should be reared a fitting monument to him who wrote the mellifluous song of the Chattahoochee, who canonized in imperishable verse

the marshes of Glynn. I should not forget the members of our own profession who have labored in your midst. Many of them sleep beneath the violet-covered sod of beautiful Rose Hill; others in other fields have brought distinction to themselves and honor to you.

Is it any wonder, then, that all patriotic Georgians should be proud of Macon? In the name of the State Medical Association, I proclaim all hail, beautiful Macon! Macon, whose sons in pulpit, on platform, on rostrum, in field, have illustrated the highest type of southern manhood and southern chivalry and whose daughters, bless them all, are as beautiful as the Medici Venus and as pure as Diana, the silver-sceptred huntress of the skies. [Loud applause.]

At the conclusion of Dr. Ridley's response, President Noble delivered his annual address.

PRESIDENT'S ADDRESS.

Gentlemen of the Medical Association of Georgia:

It is with feelings of deep pleasure and gratitude that I attempt to execute the customary functions of the high office with which you have honored me, and it is hoped that you will bear with patience and much charity my shortcomings in the discharge of the same. I am sure that our Association is to be congratulated that we are assembled again in Georgia's hospitable Central City, in such inspiring circumstances. The excellent program, unprecedented in extent, and this splendid attendance are the token and the pledge of continued work that shall promote the welfare of its membership, and that it shall go on performing its high objects of good to the profession and the public.

If by recounting some of the reasons why we should feel an enduring pride in our calling, or by speaking some word of encouragement or suggestion, I may, in however small a measure, promote the welfare of our organization, I shall feel that I have not in a wholly unworthy manner performed the task of making the usual annual address.

An endeavor to trace the beginning of the practice of medicine will lead the inquirer to the Olympian heights, and will give him mythological authority, at least, for asserting

its divine origin. Perhaps the first allusion to the medical practitioner is to be found in the history of the Centaurs, creatures described as half man and half beast. Thus, we find Chiron described as having the head and body of a man joined to the nether portions of a horse, that noble animal for which the ancients possessed such great admiration and fondness. To Chiron were attributed many good traits and virtues. He was renowned as a hunter and famed as a musician, but most distinguished for the practice of medicine, and his teachings were such that some of his pupils became noted among the heroes of Grecian story. To the care of Chiron the infant Æsculapius was confided, who, growing up to fulfil prophecy, made an immortal name as a physician, and of whom it is even related, that in one instance he restored the dead to life. When Æsculapius performed this miracle, it is said that Pluto in resentment implored Jupiter to destroy him, which he did with a bolt of lightning, but, relenting, revived him and made him a god, placing him on a throne among the stars. Thus we see exemplified the fate which has so often befallen men of lofty achievements, wherein the honors due to true greatness are recorded only after the actors have passed away from the scenes of their beneficent labors.

Following the current annals of these early times, we find two sons of Æsculapius surgeons on the fields of the Trojan war. One of them, on the advent of peace, is reputed to have practiced venesection upon the daughter of the king of Caria, and, so the romance goes, he received her hand in marriage as his recompense. Other descendants of Æsculapius held sway as leading practitioners for five hundred years.

Next follows the brilliant record of Hippocrates, the "father of medicine." It is known that he first operated for renal calculi by incision, resorted to percussion to demonstrate the presence of fluid in the thorax, practiced paracentesis thoracis, employed the trepan and used the obstetrical forceps. Glancing further down the pages of medical history, the following facts are noticeable among the more remarkable contributions to our science. Praxagoras, emboldened by the hope of averting otherwise inevitable death, braved the danger of penetrating the peritoneal

cavity, and made an artificial anus in a case of obstruction of the bowel or ileus. Herophilus was the first to discern that anatomy is the groundwork of medical practice, and instituted dissection of human subjects for this science as early as 320 B. C. Xenophon gave impetus to a great advancement in surgery by the invention of the tourniquet for controlling the loss of blood from the extremities. But the greatest mechanical ingenuity was displayed by Ammonicus, who devised lithotripsy, using an instrument especially invented for the purpose. Prior to this time, calculi were removed from the bladder by a special class who made the median incision. Celsus wrote upon injuries of the head and noticed that there could be effusions and compressions of the brain without fracture of the skull, described the hare-lip operation, and recommended the application of ligatures to arteries. A. D. 130, Galen described luxation of the femur backwards, a displacement until that time unrecognized. Aetius, A. D. 475, removed hemorrhoidal tumors and wrote on the subject of hernia. Albucasis, 1100 A. D., ventured into the trying field of intestinal surgery, and was the first to suture wounds of the intestines.

Thus, there seems to have been steady progress, until all advancement ceased with the general stagnation of the dark ages. But on the revival of learning and letters and the new awakening of civilization, we find the decade 1440-1450 distinguished by the discovery of printing, when the healing art took on new life, and with rapid strides developed all along the lines of true science. The wide-spread distribution of printed literature placed the study within the hands of such a large number of devotees, that for the next 300 years discoveries and contributions to medicine became so numerous that the mention of leading particulars, even, is far beyond the scope of this paper. In later years the labors of our own American predecessors have distinguished our land as the home of some of the most notable discoveries of all time. America gave to the world the father of abdominal surgery, the father of surgical pathology and the father of gynecology. Our country conferred upon mankind the blessings of anesthesia. In obstetrical surgery America leads her mother country

many years. The Americans acknowledge no superiors in the practice of medicine, nor in materia medica, and there have been recently established laboratories for pathological and bacteriological investigations that are equal to similar institutions anywhere; and in these lines of research Europe must look to guarding her laurels. Among the more prominent discoveries by Americans may be found the following: The first enucleation of the parotid gland was by a Boston surgeon in 1798. Resection for anchylosis of the hip and knee-joint was first done by Barton, of Philadelphia, in 1836. Rogers, of New York, removed both superior maxillæ back as far as the pterygoid processes, in 1824. Ergot was wrested from the empirical midwifery of England and introduced into scientific medicine by Stearns, of New York, in 1814. Peaslee, in 1854, introduced drainage in laparotomy, an innovation that has saved many hundreds of lives. The principles of Esmarch's bandage were discovered by Gross, of Philadelphia, Esmarch merely substituting rubber for cotton bandages. In 1856, Isaac E. Taylor devised the simplest method for operating for recto-vaginal fistula. In 1867, Theophilus Parvin cured a uretero-vaginal fistula in a manner exhibiting superior skill and ability. An American performed the earliest operation of supra-vaginal hysterectomy for fibroids of the uterus (in 1853), while the first successful laparotomy for pelvic abscess was done in our land. M. B. Wright, of Cincinnati, perfected the combined method of version, which was subsequently and unjustly accredited to Braxton Hicks, of London. Storer, of Boston, performed ablation of the uterus after Cæsarean section eight years before Porro actually performed the operation that bears his name. Washington Atlee, in 1844, did laparohysterotomy for fibroids of the uterus.

No section of our country has made more notable contributions to medicine than our own Southland, despite disparagements in want of hospital advantages. Boynham, of Virginia, deliberately and boldly did laparotomy for ectopic pregnancy in 1791, and again in 1799. John King, of South Carolina, performed the vaginal operation for the same condition in 1816. Kinloch, of South Carolina, was the first to practice laparotomy for gunshot

wounds of the intestines. Glover, of the same State, in 1801, removed a part of the spleen protruding after a stab wound. In 1810, Deadrick, of Tennessee, did the first excision of the lower jaw. Stone, of Louisiana, made the first resection of the ribs.

But coming home to Georgia, we find the first operation for removal of lung tissue in 1821, by Anthony, and in 1819, Daniel, of Savannah, putting into practice all the principles of Buck's extension apparatus for the treatment of fractures by weights and pulleys. In 1850, the first abdominal hysterotomy for cancer of the uterus was done by Paul F. Eve; and in the same year, Dr. Jeter performed laparotomy for rupture of the parturient uterus, removing the fetus and placenta from the abdominal cavity. The first total extirpation of the parotid gland was done by a Georgia doctor in the mountain region of the State. Richard Banks, of Gainesville, performed it, the operation being so extensive that it necessitated disjointing the tempero-maxillary articulation. The elucidation of the diagnosis of yellow fever, the only certain method of diagnosing dislocation of the shoulder-joint, the discovery of the excito-secretory system of nerves, and the introduction of oöphorectomy, were done by physicians of this State, who were made eminent by reason of these labors. End to end anastomosis of the intestine was first successfully performed by a member of this body, whose presence graces our meeting to-day. The discovery of anesthesia and the first successful operation under its influence (1842), were incidents in the life of a village doctor, of Georgia, and yet there are others who strove, and whose advocates are still striving, to obscure the just claim of Crawford W. Long as the giver of this inestimable boon to the profession and to humanity. Who is not proud to own relationship to this splendid list of eminent Georgians? Such an exhibition of surpassing genius and ability should excite the ardent admiration of every young physician in our midst, and cause him to feel that it is indeed an honor to follow in their footsteps, and enjoy a membership in a society whose records are brilliant with their immortal names and achievements. And the pride we feel in recalling and recognizing these glorious results should move us to make an effort and see to it that

the honors they deserve shall not be perpetuated by an occasional blot of cold type, but that their fame should have more conspicuous recognition. How fitting it would be if our legislature should erect a monument to such men as Crawford W. Long and his compeers, adorned with the record of their names and splendid labors!

May I not suggest here the reason why our association has (as far as there has been failure) failed to impress its ideas upon public legislation? Our organization has not been so complete in form and in methods as the strength and dignity of the body would warrant. I have thought that we should appoint and sustain a standing committee on legislation, charged with the duty of thoroughly organizing the profession of the State by congressional districts and by counties, for the purpose of advancing the interests of medicine, surgery and hygiene; to protect the people from impositions and frauds of quacks and charlatans; to guard against the occurrence and spread of epidemics; to reinstate and improve the laws regulating the action of a State Board of Health, clothed with enlarged and better defined powers and duties, and to furnish earnest support and encouragement by active and helpful co-operation with the State Board of Medical Examiners. Without the co-operation and faithful support of the membership of our State Association, those to whom are committed the power and responsibility of enforcing the provisions of the public statutes must be, perforce, compelled to give us but a "lame and impotent" administration of those laws, while with our active support the laws will become vitalized to work out and accomplish the best results.

Is it not opportune that our association should take some active measures against the questionable methods in vogue, or at least of frequent occurrence in connection with the obtainment and application of expert testimony in trials in our courts? Whenever it appears that a certain set may be found giving testimony in a common class of cases, and uniformly and constantly on the same side of the question and for the same attorneys, is it not time and occasion for the public to pause and ask if common justice is not being violated and common honesty forgotten? Is it a wonder that such circumstances bring discredit upon the whole

profession, and it is called to task for permitting such practices? Is there not a way to abolish the system by which the expert is the paid witness of either one side or the other, so as to do justice to all and remove the physician from even the appearance of being biased on the side from which he may receive pay for his time, trouble and expert knowledge? This is a question which might profitably engage the practical attention of our body, whose solution made in a wise and just spirit, backed by the active influence and indorsement of our whole membership might crystallize into the law of the land, greatly to the promotion of the cause of truth and justice for all time to come.

Another matter worthy of our most earnest attention and endeavors is the duty of urging the establishment by the State, as a branch of our Insane Asylum, of a hospital for the treatment and cure of that considerable number of patients which science has demonstrated to be curable by surgical or gynecological operations. An authoritative announcement of our body, widely disseminated, that many of these unfortunate charges on the public might be restored to useful citizenship by proper treatment, and this announcement backed up by united effort on our part, would so mold public opinion that such a hospital might be speedily provided, an institution that in the end would effect a saving in the public expense and greatly promote the cause of humanity. Surely it is the part of our Association to make the need known, and to rest not until there is established this true blessing to the State. Without suggesting further details, it might seem that such an institution should be created, and its work placed in charge of a surgeon and gynecologist, together with an alienist and a nerve specialist, in order that the highest and best results be obtained.

These few suggestions are but the outlines of the picture of public beneficence it is in the power of the Medical Association of Georgia to frame for the admiring view of our people, if we will come closer together with new and firm resolve to act in vigorous concert, and with true professional and personal zeal.

Let us here, amid the pleasant social surroundings of our annual meeting, where we have for a season turned our backs on the phantoms of sickness and suffering and sor-

row, renew again and strengthen our pledges of devotion to our profession.

Congratulating our noble board of censors who have so efficiently performed the duties—the delicate duties—of their trust, let us uphold their just actions. Theirs indeed is a difficult task. They must ascertain and decide upon acts and facts in the conduct of brothers that constitute a breach of our professional rules of conduct, the safeguard of our honor and our real welfare. Far removed from every personal consideration, with the deepest desire to discover the truth and do the right, uncaring consequences, but approaching their task with brotherly charity, it is their office to give gentle admonition of breaches of minor rules, but fearlessly to report facts when grave infractions occur. Let us give our censors thanks and support in their arduous work. It is theirs to note, not in harshness, the failings and mischances of our erring brothers, with a view to friendly correction; it is for us to stamp the seal of condemnation when deserved, and lifting still higher the spotless banner of true professional ethics, find delight to battle under its folds still on to the end.

With all the glories of the past, the calling we follow holds forth far greater opportunities for the future, discerned in the morn of the twentieth century. The spirit of improvement warms in the ardor of the times, science and art and all the forms of human progress are quickening the minds and aspirations of men. Education is advancing the capacities of knowledge. The coming decades should therefore find our profession, here in Georgia and throughout the world, rising higher in the scale of usefulness and accomplishment. We must stir every nerve of ambition and of pride to incite us not to lag behind, but to lead in the march of onward and upward progress.

To these ends nothing can so lend advancement as renewed, stronger mutual promises to place the practice of medicine on the highest planes of professional honor, removing it far above the bogs and miasma of quackery and charlatanism. There, no alluring siren of gain shall tempt to turn our barks upon the hidden rocks that underlie the treacherous, but often tranquil and fair waters on which rudderless ships essay to sail; but, setting forth upon the

broad seas of a pure ethical system, guided by our pole star, emitting rays of truth to self, humanity, our science and to each other, we can steer steadily in gale or storm, and will reach the haven of safety and honor.

Dr. Howard J. Williams, of Macon, reported in behalf of the Committee of Arrangements, that the Macon Medical Society would tender the members of the Association a reception at the Cherokee Club on Wednesday evening, April 21st, at 9 o'clock, and a barbecue at the Ocmulgee Park on Thursday afternoon, April 22d, at 6:30. Invitations were extended to the members to visit the public library, the Commercial Club, and the Log Cabin Club.

The President: The next business in order is the report of the Committee on Program, Dr. Louis H. Jones, of Atlanta, Chairman.

Dr. Jones: Mr. President—The program speaks for itself. We think your Committee on Program has succeeded in getting the largest ever presented to the Association. This was done after a good deal of hard work on the part of your committee. A personal letter was written to every member of the Association, it being dictated to a stenographer. By looking at the program you will see that we have fifty-seven papers or more promised, and we hope that most of the authors of these papers will be here. Your committee has nothing further to report at this time.

The President: It is customary to take action on this report, and when it is adopted it becomes a part of the By-Laws for the guidance of the Association, and we have been in the habit of standing by it. What will you do with it?

On motion, the program as printed was adopted. It is as follows:

FIRST DAY—WEDNESDAY, APRIL 21ST.

MORNING SESSION—10 O'CLOCK.

Prayer.
Addresses of Welcome, by Hon. N. E. Harris and Dr. W. F. Holt.
Response by Dr. F. M. Ridley.
President's Annual Address.
Report of Committee of Arrangements.
Report of Committee on Program.
Report of Committee on Constitution and By-Laws.
Filling Vacancies on Board of Censors.
Applications for Membership.

1. A Study of the Refraction of One Thousand Eyes, C. H. Peete, M.D., Macon.
2. Enterocolitis of Infancy, M. A. Clark, M.D., Barnesville.
3. Some Unusual Cases in Abdominal and Gynecological Work, K. P. Moore, M.D., Macon.
4. The Abortive Treatment of Acute Suppurative Inguinal Adentis by Pressure Bandage, Henry R. Slack, M.D., LaGrange.
5. The Treatment of Cutaneous Cases, J. B. Morgan, M.D., Augusta.
6. Puerperal Eclampsia, with Report of Cases, S. Rumble, M.D., Goggansville.
7. Two Cases of Malignant Tumor Affecting the Breast, and their Treatment, M. B. Hutchins, M.D., Atlanta.

AFTERNOON SESSION—2:30 O'CLOCK.

8. Impurities of Drinking Water, C. D. Hurt, M.D., Atlanta.
9. Expert Testimony in Criminal Cases Involving the Plea of Insanity, J C. Olmsted, M.D., Atlanta.
10. Prevention of Tuberculosis, J. S. Todd, M.D., Atlanta.
11. A Case of Cystocele Complicating Labor, V. D. Lockhart, M.D., Maysville
12. Functional Weakness in Organically Healthy Eyes, J. H. Shorter, M.D., Macon.
13. Some Amusing Instances of Nasal Reflex, A. G. Hobbs, M.D., Atlanta.
14. Eucaine, with Report of Case, D. D. Quillian, M.D., Athens.
15. Influenza, with Different Phases and Nervous Tendencies, W. O'Daniel, M. D., Bullards.
16. The Neuroses of Children, Katherine Collins, M.D., Atlanta.
17. Atypical Fevers, E. H. Richardson, M.D., Atlanta.

SECOND DAY—THURSDAY, APRIL 22D.

MORNING SESSION—9 O'CLOCK.

Reading of Minutes.
Applications for Membership.
Report of Board of Censors.
Report of Secretary and Treasurer.
Report of Special and Standing Committees.
Appointment of Auditing Committee.

18. Meddlesome Instrumentation in Urethral Diseases, W. L. Champion, M.D., Atlanta.
19. Relation of the State Board of Medical Examiners to the Profession of the State, E. R. Anthony, M.D., Griffin.
20. Some Recent Surgical Cases, Hunter P. Cooper, M.D., Atlanta.
21. Cystitis, F. M. Ridley, M.D., LaGrange
22. Fracture of the Skull, with Report of Cases, W. B. Tate, M.D., Tate.
23. Physical Signs in Diseases of the Lungs, Louis H. Jones, M.D., Atlanta.
24. Remarks on Certain Ocular Disturbances of General Interest, A. W. Stirling, M.D., Atlanta.
25. Rapid Dilatation of the Uterus a Conservative Operation. R. M. Harbin, M.D., Rome.
26. Remarks on Fistula in Ano, W. S. Goldsmith, M.D., Atlanta.

AFTERNOON SESSION—2:30 O'CLOCK.

27. The Induction of Premature Labor in the Interest of the Mother and the Child, E. R. Corson, M.D., Savannah.
28. Obstetric Surgery, Joseph Eve Allen, M.D., Augusta.
29. Ascites in Abdominal Surgery, Virgil O. Hardon, M.D., Atlanta.
30. The Treatment of Pleuritis, Newt Anderson, M.D., Eudora.
31. An Act to Create a Commissioner of Health and Drainage for the State of Georgia, J. C. LeHardy, M.D., Savannah.
32. Laparo-Hysterotomy, Report of a Successful Case and a Plea for its More Frequent Adoption, A. Moody Burt, M.D., Sparta.
33. Hernia, W. F. Westmoreland, M.D., Atlanta.
34. Puerperal Septicemia, Its Causes and Treatment, J. D. Chason, M.D., Iron City.
35. Puerperal Infection, Its Causes and Treatment, I. H. Goss, M.D., Athens.
36. The Present Status of Puerperal Infection, R. R. Kime, M.D., Atlanta.

THIRD DAY—FRIDAY, APRIL 23D.

MORNING SESSION—9:30 O'CLOCK.

Reading of Minutes.
Application for Membership.
Report of Board of Censors.

37. Spinal Paralysis, W. J. Cox, M.D., Barnesville.
38. Some Practical Suggestions in Regard to the Tongue, Pulse and Temperature, W. S. Kendrick, M.D., Atlanta.
39. Some Interesting Ophthalmological Cases, J. Lawton Hiers, M.D., Savannah.
40. Morphine and its Effects, Addison K. Bell, M.D., Madison.
41. Some Remarks on the Treatment of Chronic Otorrhea, Dunbar Roy, M.D., Atlanta.
42. Keratitis Parenchymatosa, a Review of Seven Cases, T. E. Mitchell, M.D., Columbus.

ELECTION OF OFFICERS AT 11 O'CLOCK.

43. Report of Case of Extra-Uterine Pregnancy, J. R. Shannon, M.D., Cabaniss.
44. Report of Case of Empyema in Infant, Aged Seventeen Months, Operation, Recovery, T. R. Garlington, M.D., Rome.
45. Fracture of the Skull, with Report of Cases, W. S. Elkin, M.D., Atlanta.

AFTERNOON SESSION—2:30 O'CLOCK.

46. A Successful Rhinoplastic Operation for Extensive Destruction of Nose. Removal of Ossicles for Chronic Suppurative Aural Catarrh, Cure, J. M. Crawford, M.D., Atlanta.
47. Chorea, Hugh Hagan, M.D., Atlanta.
48. Report of Case of Central Laceration of Perineum during Labor, P. R. Cortelyou, M.D., Marietta.
49. Lupus of the Nose, Its Medical and Surgical Treatment, George Horine, M.D., Americus.
50. Dermoid Cyst of the Bladder, with Report of Case, W. A. Crowe, M.D., Atlanta.
51. Hemorrhagic Fever, L. P. Hudson, M.D., Cochran.
52. Acranial Monster, Specimen and Report of Case, W. P. Williams, M.D., Blackshear.
53. Quinine Blindness, A. W. Calhoun, M.D., Atlanta.
54. Some Wash Drawings Illustrating Case, George H. Noble, M.D., Atlanta.
55. Infant Mortality, E. Van Goidtsnoven, M.D., Atlanta.
56. La Grippe, W. C. Lyle, M.D., Augusta.
57. History of Epidemics, Marcus F. Carson, M.D., Griffin.

Dr. Joseph Price, of Philadelphia, will read a paper on
Dr. Samuel Lloyd, of New York, will read a paper on Demonstration of Roentgen Rays.
Dr. Hunter McGuire, of Richmond, will read a paper on Appendicitis.
Dr. W. E. B. Davis, of Birmingham, will read a paper on Report of Cases of Pyosalpinx Treated by Incision and Drainage.

The President called for the report of the Committee on Correspondence for New Members.

Dr. Westmoreland, the Chairman, said: Your committee found on investigation that they had absolutely no rule to go by or that had been outlined, so that we mapped out a method which we think will have the effect of increasing the membership of the Association for which this committee was created. When the committee began its work, it conceived the idea that we should organize as thoroughly and as rapidly as

possible, making a more or less complete directory of the State, and that in doing its work it should attempt to reach men who are not members of the Association rather than trying to do its work through men who are already affiliated with it. In carrying out this idea we have organized a more or less complete directory of the State, and I suppose we have from 1,500 to 2,000 names. We made the following suggestions to the Committee on New Constitution and By-Laws, which I will read from section 7, article V., of the By-Laws.

"Committee on New Members shall consist of a Chairman appointed by the President, and one other member from each county in the State, who shall be appointed by the chairman. The duties of this committee shall be to make as complete a directory of the regular physicians in the State and at such times as they deem best to issue a circular letter to these physicians, requesting them to become members of this Association and attend its meetings.

"Each member of this committee will send to the Chairman as accurate and complete a list of the regular physicians residing in his own and adjoining counties as possible."

We think by organizing the committee on those lines and having a membership in each one of the different counties of the State of at least 136, who are interested in the work of the Association, we will be able to increase not only the membership but the interest which has been taken in it. As far as possible, during the past year we have carried out this plan, and while it is incomplete and will be for the next year or two, we think by organizing on this line we will increase both the membership and interest which is taken in the Association by the individual members of the regular profession of the State. In this way, we will accomplish what the Association is intended for.

The President: What will you do with this report?

Dr. Duncan: I move that it be accepted.

Seconded and carried.

The President: We will now listen to the report of the Committee on Constitution and By-Laws, Dr. Willis F. Westmoreland, Chairman.

Dr. Westmoreland: Your Committee on Constitution and By-Laws has had a rather hard task in preparing the report which they submit to you to-day. In looking over the Constitution and By-Laws which we have been following in the past, we find rules of the Association have been more conspicuous by their absence than presence in the By-Laws. In looking over the Transactions since 1872 and following the different resolutions and amendments which have been adopted at various meetings, we find very few of them have been transferred to their proper sections after having been adopted. These resolutions when adopted were never transferred to their proper place in the Constitution and By-Laws. A few of those which have been transferred were absolutely inconsistent in regard to their action. So, in compiling this report, your committee have had to a great extent to do away with the present By-Laws, not so much with the Constitution, and have simply written it anew, conforming as far as possible to the precedents established, as seen in the minutes of the Association. The Constitution has to lie over for a year. Any changes will have to be made at this meeting and lie over, and when the matter comes up next year any amendment or amendments can be added to it at that time. I will now read the Constitution.

CONSTITUTION AND BY-LAWS

OF THE

MEDICAL ASSOCIATION OF GEORGIA.

CONSTITUTION.

ARTICLE I.

NAME.

Section 1. The name of this Association shall be "The Medical Association of Georgia."

OBJECTS.

Sec. 2. The object of this Association shall be to organize the medical profession of the State in the most efficient manner possible; to encourage a high standard of professional qualifications and ethics, and to promote professional brotherhood.

ARTICLE II.

MEMBERS.

Section 1. Any white physician, who resides within the limits of the State, who is a graduate of a regular medical college in good standing, and who adopts and conforms to the Code of Ethics of the American Medical Association, shall be eligible to membership in this body.

ARTICLE III.

OFFICERS.

Section 1. The officers of this Association shall consist of one President; two Vice-Presidents; one Secretary; one Treasurer; five Censors.

Sec. 2. The President and Vice-Presidents shall be elected for one year; the Secretary and Treasurer each for five years; each officer shall continue in office until his successor is elected and installed.

Sec. 3. Members of the Board of Censors shall be elected for a term of five years. There shall be an annual election of one member. Vacancies occurring from other causes shall be filled for the unexpired term.

ARTICLE IV.

PRESIDENT.

Section 1. The President shall be the chief executive officer of the Association. He shall preside at all the meetings of the body, preserve order, and perform such other duties as parliamentary usages impose on presiding officers.

Sec. 2. He shall prepare and deliver, at the opening of each annual session, an address on some subject connected with the interests and objects of this Association.

Sec. 3. He shall appoint the requisite number of delegates to the American Medical Association, and to such other scientific bodies as may be desirable.

Sec. 4. The President shall be *ex officio* member of all annual committees.

Sec. 5. He shall, in the intervals between the annual sessions, direct and control the general policy and business of the Association, with careful attention to its constitutional provisions.

Sec. 6. He shall appoint all annual committees, also an Auditing Committee, consisting of three members, whose duty it shall be to investigate and audit the books and accounts of the Secretary and Treasurer, and report their findings to the meeting.

ARTICLE V.

VICE-PRESIDENT.

Section 1. Vice-Presidents, in their order, shall, in case of the absence or the death of the President, discharge all the duties belonging to the presidential office.

ARTICLE VI.

SECRETARY.

Section 1. The Secretary shall have charge of all the books, papers, and records of the Association, except those belonging to the office of Treasurer, and shall record the minutes of the Association at all its meetings. He shall be *ex officio* member of the Publishing Committee.

Sec. 2. He shall, by February 1st, send a notice to each member, of the time and place of ensuing meeting, requesting his interest and his personal efforts in securing a large attendance, and requesting each member to send the title of his paper to the Chairman of the Program Committee.

Sec. 3. He shall keep the roll of the members of this body who have retained their membership by compliance with the provisions of this Constitution, and also the names of those who have forfeited membership, together with the cause of such forfeiture.

Sec. 4. In the absence of the Treasurer he shall collect the usual dues of the members in attendance at the regular session.

Sec. 5. The necessary expense incurred by the Secretary in attending the annual session shall be defrayed out of the funds of the Association.

Sec. 6. He shall furnish a balance sheet at each annual meeting to be published in the Transactions: This shall consist of an itemized statement of all accounts made, and all moneys received and disbursed by him.

Sec. 7. The Secretary shall provide and keep upon his desk, during each meeting, a copy of the "Rules of Order," provided for by the By-Laws.

ARTICLE VII.

TREASURER.

Section 1. The Treasurer shall collect the annual dues and have custody of all the moneys belonging to the Association, and pay the vouchers of the Secretary when approved by the President.

Sec. 2. He shall at each annual meeting furnish a balance sheet for the past fiscal year to be published in the Transactions. This shall consist of an itemized statement of all financial transactions of the past year, all accounts made, all moneys received and from whom, and all moneys disbursed, to whom and for what purpose, with vouchers attached. [A fiscal year includes the period of time between the first day of one annual meeting and the first day of the next.]

Sec. 3. The necessary expense incurred by the Treasurer in attending the annual sessions shall be paid out of the funds of the Association.

ARTICLE VIII.

CENSORS.

Section 1. The Board of Censors shall hold annual meetings concurrently with the annual sessions of the Association, to whom shall be referred all applications for membership, with vouchers from two members; and in such case their decision shall be re-

ported to the body for action. Three of their number shall constitute a quorum for business, and the Chairman and Secretary shall be designated by the President.

Sec. 2. They shall take cognizance of all offenses against the Association or its Code of Ethics, and shall be authorized to strike from the list of membership all violators of its regulations, and shall report the names of the individuals, and the offense for which action has been taken, immediately to the Association, at which time, or at the next succeeding meeting, all such individuals may have the right to appeal to that body.

Sec. 3. The President of the Association or the chairman of the Board of Censors may call the Board together at any time between the meetings, for the investigation of any offense on the part of any member or members, of sufficient importance to necessitate such action. The Board of Censors shall at all times have the power embodied in art. VIII., sec. 2.

Sec. 4. The President and Board of Censors shall constitute a tribunal with power to suspend any officer for cause.

ARTICLE IX.

FINANCES.

Section 1. Every member of the Association shall pay annually into the treasury such sum as the Association may determine, which amount, it is expected, will be paid during the session of the body.

ARTICLE X.

CONSTITUTION.

Section 1. The Constitution shall take immediate effect from its adoption.

Sec. 2. The By-Laws now in operation, and Order of Business, are adopted, so far as they agree with this Constitution.

ARTICLE XI.

ANNUAL MEETING.

Section 1. The annual meetings shall take place on the third Wednesday in April, and at such place as shall be designated by the majority of the Association.

ARTICLE XII.

AMENDMENTS.

Section 1. Any amendment that may be offered to the Constitution shall lie over until the next annual meeting; and for its adoption at such meeting shall require a two-thirds vote of all present and voting.

BY-LAWS.

ARTICLE I.

ORDER OF BUSINESS.

Section 1. Meeting of the Association at an hour appointed by the Program Committee.

Sec. 2. Report of the Annual Committees: (1) Committee on Arrangements; (2) Committee on Program; (3) Committee on Publication; (4) Committee on Necrology; (5) Committee on New Members; (6) Committee on Prize Essays.

Sec. 3. Report of Special Committees.

Sec. 4. Report of Secretary.

Sec. 5. Report of Treasurer.

Sec. 6. Appointment of Auditing Committee, who shall report on or before morning of third day.

President's Address.

Sec. 7. Election of officers.

Sec. 8. Selection of place for next annual meeting.

Sec. 9. New business.

Sec. 10. Unfinished business.

Sec. 11. Installation of new officers.

ARTICLE II.

ELECTION OF OFFICERS.

Section 1. The officers of the Association shall be elected by ballot, without a nomination at 11 o'clock on the morning of the last day of the Association, and if there is no election on the first ballot, the three names receiving the highest number of ballots shall be voted on, the other names being dropped. If there is no election on second ballot, the two names receiving the highest number of ballots shall be voted on until an election occurs.

ARTICLE III.

SELECTION OF PLACE OF MEETING.

Section 1. Selection of place for next annual meeting shall occur immediately after the election of officers.

ARTICLE IV.

OFFICERS.

Section 1. All officers of this Association shall enter upon their duties at the time of their election.

ARTICLE V.

COMMITTEES.

Section 1. Each committee, except the Committee on New Members, and their Chairman, shall be appointed by the President.

Sec. 2. There shall be five Annual Committees, as follows:

Sec. 3. Committee of Arrangements shall consist of five members, residents of the place selected for the ensuing meeting. They shall provide suitable accommodations for the meetings of the Association, space for medical and surgical exhibits, and make such other local arrangements as they may deem essential for the success of the meeting.

Sec. 4. The Committee on Publication shall consist of five members in addition to the President and Secretary (*ex officio*). They shall provide for the publication of the minutes of the session, together with such papers as are deemed worthy. They shall also append to each volume of Transactions a copy of the Constitution and By-Laws of the Association, and Roll of Membership. They shall also be governed by article VIII., By-Laws.

Sec. 5. The Committee on Necrology shall consist of five members, whose duty it shall be to procure short memorials of deceased members, and present them for publication in the Transactions.

Sec. 6. Committee on Program shall consist of five members. They shall, on February 1st, issue a circular letter to each member of this Association, and such other regular physicians as they may deem proper, requesting them to read a paper at the ensuing meeting, the title of which should be sent to the chairman of this committee before March 1st. On March 10th, they shall issue and mail to each member a preliminary program. Ten days before the meeting they shall issue and mail to each member the final program. This program shall contain the

titles of all papers to be read, the order of business, entertainments, etc., as agreed upon by the Committee of Arrangements and this committee, information in regard to hotel and railroad rates, amendments to Constitution and By-Laws, and such other information as may suggest itself to this committee as being of value to the members of the Association.

Sec. 7. Committee on New Members shall consist of a Chairman appointed by the President, and one other member from each county in the State, who shall be appointed by the Chairman. The duties of this committee shall be to make as complete a directory of the regular physicians in this State and at such times as they deem best to issue a circular letter to these physicians, requesting them to become members of this Association and attend its meetings.

Each member of this committee will send to the Chairman as accurate and complete a list of the regular physicians residing in his own and adjoining counties as possible.

Sec. 8. The Auditing Committee shall consist of three members appointed by the President on the morning of the first day of the meeting. They shall examine, verify and audit the books and accounts of the various officers, and report their findings to the meeting on or before the morning of the third day.

ARTICLE VI.

MEMBERSHIP.

Section 1. Any member, for old age, length of service or other good reasons, can, upon the recommendation of the Board of Censors, be elected to an honorary membership without dues, otherwise they shall be governed by the rules applying to active members.

Sec. 2. The names of all applicants for membership shall first be presented to the Association through the Secretary and then referred to the Board of Censors, who shall report their action to the meeting for adoption.

Sec. 3. Any physician qualifying under article II., section 1, of the Constitution, whose application is vouched for by two members of this Association and accompanied by the initiation fee, may, on the discretion of the President, be accepted before Association convenes, as a temporary member. Such membership can be made regular only by the action of the Association as provided for in article VI., section 2, of the By-Laws.

ARTICLE VII.

FINANCE.

Section 1. Each member on admission shall pay an initiation fee of five dollars, which shall include his dues for the first year.

Sec. 2. Each member shall pay in advance the sum of three dollars annually thereafter.

Sec. 3. All members who have neglected to pay their dues for two years shall be reported to the Board of Censors, by the Treasurer.

The Board of Censors shall have the power to forfeit the membership of such delinquents. The Treasurer will notify the members of the action of said Board and the state of their account.

Sec. 4. No physician who is in any way indebted to the Association will be eligible to membership until such indebtedness is canceled.

Sec. 5. No member shall receive a copy of the Transactions until his fees are paid in full.

ARTICLE VIII.

PAPERS.

Section 1. The titles to all papers to be read at any annual meeting shall be furnished the Chairman of the Program Committee thirty days before the meeting.

Sec. 2. Not more than twenty minutes shall be occupied in reading any paper. No speaker shall be allowed to speak a second time on the same subject, nor consume more than five minutes in the discussion.

Sec. 3. No paper shall occupy over twenty pages of the Transactions.

Sec. 4. The Publication Committee shall decline to publish any paper not handed to the Secretary complete before the final adjournment of the annual meeting.

Sec. 5. No paper shall be read before the Association that has already been published, or that has been read before any other body.

Sec. 6. A member presenting a paper must be present at the meeting in order to have it published in the Transactions.

ARTICLE IX.

QUORUM.

Section 1. The members present shall constitute a quorum for all business excepting the admission of new members or acting upon amendments to the Constitution and By-Laws, when not less than twenty-five members must be in attendance.

ARTICLE X.

DECORUM.

Section 1. No remarks reflecting upon the personal or professional character of any member shall be in order at any meeting, except when introduced by the Board of Censors.

ARTICLE XI.

STENOGRAPHER.

Section 1. The Association each year shall appoint an official stenographer.

ARTICLE XII.

RULES.

"Roberts' Rules of Order" shall be accepted as a parliamentary guide in the deliberations of the Association.

W. F. WESTMORELAND,
Chairman.

The President: All amendments to the Constitution made at this meeting will have to lie over until it comes up again next year.

On motion of Dr. Duncan, the report of the committee was accepted.

Dr. Westmoreland: Your committee desires to further report as follows:

1. That the Secretary be instructed to secure the most recent copy of the Code of Ethics, to be published in the manner which has been indicated.

2. *Resolved*, That the Committee on Prize Essay be done away with; that the fund be turned into the Treasury of the Association, to be used until such time as another Committee on Prize Essay may be established.

3. *Resolved*, That a committee be appointed to straighten out the terms and length of service of the present Board of Censors; in other words, to begin anew to decide the exact standing of the different members of the board, beginning their terms with one, two, three, four and five years, so that at each succeeding year we can have an election.

4. That the President's Annual Address be abolished.

Dr. Morgan moved that 9 o'clock Thursday morning be the time set for the consideration of the report of the Committee on Constitution and By-Laws, also the recommendations of the committee.

Seconded.

Dr. Moore: I think it is well to dispose of the report of the Committee on Constitution and By-Laws now rather than defer it. I do not wish to enter into any discussion regarding this matter at present.

Dr. Morgan's motion was then put and carried.

The reading of papers was proceeded with, and Dr. M. A. Clark, of Macon, read a paper entitled "Enterocolitis of Infancy," which was discussed by Dr. Chason.

Dr. K. P. Moore, of Macon, read a paper entitled "Some Unusual Cases in Abdominal and Gynecological Work."

The Board of Censors reported favorably on the following applications presented for membership during the sessions, and these applicants were declared duly elected:

Dr. W. A. Edenfield	Pinehurst	Dooly County.
Dr. Wm. W. Terrell	Douglas	Coffee County.
Dr. Thos. J. McArthur	Unadilla	Dooly County.
Dr. J. W. Storey	Dennard	Houston County.
Dr. Clebe Jowers	Americus	Sumter County.
Dr. O. B. Bush	Colquitt	Miller County.
Dr. A. B. Peters	Moultrie	Colquitt County.
Dr. A. Peterson	Tifton	Berrien County.
Dr. Lucius C. Goreke	Dawson	Terrell County.
Dr. T. B. Hallis	Bolingbroke	Monroe County.
Dr. W. J. Williams	Pembroke	Bryan County.

Dr. C. T. Amason	Neilly	Telfair County.
Dr. F. S. Bourns	Atlanta	Fulton County.
Dr. J. D. Coleman	Henderson	Houston County.
Dr. O. S. DuPree	Danville	Twiggs County.
Dr. R. C. Wiley	Sparta	Hancock County.
Dr. F. W. Coile	Winterville	Oglethrope County
Dr. J. B. Douglas	Talbotton	Talbot County
Dr. Julian H. Evans	Davisboro	Washington Co.
Dr. Wm. L. Thompson	Pitts	Wilcox County.
Dr. Alex Mack	Hawkinsville	Pulaski County.
Dr. I. L. McCurry	Hartwell	Hart County.
Dr. Edward A. Cason	LaGrange	Troup County.
Dr. Louis O. Wootten	Unadilla	Dooly County.
Dr. Elliott L. Baker	Odessadale	Meriwether County
Dr. Forest L. Cosby	Box Spring	Talbot County.
Dr. J. M. Moore	Macon	Bibb County.
Dr. J. P. Rosser	Atlanta	Fulton County
Dr. J. L. McLean	Birdford	Tattnall County.
Dr. John R. Rose	Eastman	Dodge County.
Dr. W. H. Whipple	Macon	Bibb County.
Dr. P. E. Wilkie	Colquitt	Miller County.
Dr. I. M. Pla	Atlanta	Fulton County.
Dr. H. F. Frederick	Grovania	Houston County.
Dr. M. M. Stapler	Macon	Bibb County.
Dr. Arthur S. Bayett	Friendship	Sumter County.
Dr. B. L. Bridges	Ellaville	Schley County.
Dr. Wm. S. Prather	Americus	Sumter County.
Dr. J. G. Coile	Monticello	Jasper County.
Dr. J. F. Webb	Monticello	Jasper County.
Dr. Walter W. Lee	Gordon	Wilkinson County
Dr. W. J. Turner	Ashburne	Worth County.
Dr Joaquin M. Omiley	Atlanta	Fulton County.
Dr. James I. Griffith	Danielsville	Madison County.
Dr. J. W. Gillespie	Albany	Dougherty County
Dr. R. O. Montgomery	Greensboro	Greene County.
Dr. J. E. Mangham	Reynolds	Taylor County.
Dr. Max Jackson	Macon	Bibb County.

Dr. G. B. Watson	Acree	Dougherty County.
Dr. J. E. Goethe	Blackshear	Pierce County.
Dr. W. J. Adair	Rockmart	Polk County.
Dr. W. T. Carswell	Irwinton	Wilkinson County
Dr. John W. Saunders	Unadilla	Dooly County.
Dr. T. F. Bivins	Vienna	Dooly County.
Dr. F. H. Sims	Atlanta	Fulton County.
Dr. C. W. Reid	Pelham	Mitchell County.
Dr. W. J. Rowe	Buford	Gwinnett County.
Dr. R. E. Adair	Taylorsville	Bartow County.
Dr. E. J. Denson	Allentown	Wilkinson County
Dr. Chas. F. Benson	Atlanta	Fulton County.
Dr. G. A. Lawrence	Haddock	Jones County.
Dr. J. H. Bullard	Machen	Jasper County.
Dr. W. M. Bullard	Monticello	Jasper County.
Dr. Pryor W. Fitts	Mountville	Troup County.
Dr. F. L. Lewis	Camilla	Mitchell County.
Dr. J. L. Farmer	Millen	Screven County.
Dr. J. W. Westmoreland	Atlanta	Fulton County.
Dr. W. Hosea Moss	Monroe	Walton County.
Dr. B. L. Joiner	Andersonville	Sumter County.
Dr. R. F. Rudisille	Forsyth	Monroe County.
Dr. Geo. H. Stubbs	Lithia Springs	Douglas County.
Dr. A. S. Oliver	Elberton	Elbert County.
Dr. Warren L. Storey	Sycamore	Irwin County.
Dr. W. R. Terry	Geary	Calhoun County.
Dr. Edward Boyd	Atlanta	Fulton County.
Dr. C. P. Stovall	Vienna	Dooly County.
Dr. W. C. Robinson	Atlanta	Fulton County.
Dr. M. F. Carson	Griffin	Spalding County.
Dr. N. D. Drewry	Griffin	Spalding County.
Dr. E. S. Harrison	Thomson	McDuffie County.
Dr. J. A. Ward	Richwood	Dooly County.
Dr. J. K. Burns	Clarkville	Habersham Co.
Dr. S. J. Smith	Jefferson	Jackson County.
Dr. J. W. Eberhart	Hartwell	Hart County.
Dr. A. C. Halliday	Athens	Clarke County.

Dr. W. C. Griffin	Cartersville	Bartow County
Dr. T. D. Walker	Cochran	Pulaski County.
Dr. C. M. Drake	Atlanta	Fulton County.
Dr. Wm. B. Tucker	Chipley	Harris County.
Dr. W. A. Johnson	Rome	Floyd County.
Dr. I. N. B. Spence	Social Circle	Walton County
Dr. Joseph W. Rogers	Reynolds	Taylor County.
Dr. Guy Chappell	Bronwood	Terrell County.
Dr. W. W. Joiner	Hawkinsville	Pulaski County.
Dr. Geo. L. Chapman	Dublin	Laurens County.
Dr. J. F. McMath	Andersonville	Sumter County.
Dr. Chas. D. Redding	Lizella	Bibb County.
Dr. E. C. Ripley	Barnesville	Pike County.
Dr. J. H. Latimer, Jr.	Hazelhurst	Appling County.
Dr. Chas. M. Summey	Stone Mountain	DeKalb County.
Dr. John L. Stapleton	Bronwood	Terrell County

On motion, the Association adjourned until 2:30 p.m.

FIRST DAY—AFTERNOON SESSION.

The Association reassembled at 3 p.m., and was called to order by the President.

Dr. Moore's paper was briefly discussed by Dr. Kime.

Dr. Henry R. Slack, of LaGrange, read a paper entitled "The Use of Blue Pyoktanin in the Treatment of Inoperable Malignant Growths," and asked that it be substituted for the one by him, the title of which was given in the program.

This paper was discussed by Drs. Wolff, Lloyd, Hutchins, Stockard, Kime, Morgan, and the discussion closed by the essayist.

Dr. J. B. Morgan, of Augusta, read a paper on "Treatment of Cutaneous Cancers," which was discussed by Drs.

Hardman, Lockhart, Wolff, Hutchins, Shorter, and in closing by the essayist.

Dr. S. Rumble, of Goggansville, contributed a paper on "Puerperal Eclampsia, with Report of Cases."

Discussed by Drs. Duncan, Greenwood, Chason, Kime, Slack, and in closing by the author of the paper.

Dr. M. B. Hutchins, of Atlanta, followed with a paper entitled "Two Cases of Malignant Tumor Affecting the Breast, and their Treatment."

Discussed by Drs. Wolff, Westmoreland and Hutchins.

Dr. W. O'Daniel, of Bullards, asked that his paper entitled "Influenza with Different Phases and Nervous Tendencies," be read by title. This request was granted.

On motion, the Association adjourned until Thursday, 9 a.m.

SECOND DAY—MORNING SESSION.

The Association was called to order promptly at 9 a.m. by the President, who stated that the special order for this hour was the consideration of the report of the Committee on Constitution and By-Laws.

On motion of Dr. Kime, the report of the committee was accepted.

The President: The report of the committee having been received, what is your pleasure concerning the disposition of the same?

Dr. Westmoreland: Mr. President, this is out of order. The Constitution has got to be accepted by articles, or taken up seriatim.

Dr. E. H. Richardson: I move that the consideration of the Constitution and By-Laws be postponed until to-morrow.

Seconded.

Dr. Jones: I desire to amend Dr. Richardson's motion, that it be made the special order immediately after the election of officers.

Seconded.

Dr. Westmoreland: We cannot postpone the regular order of business, and I do not see any use in postponing the consideration of this matter. Let us get through with it this morning. We must get a two-thirds vote of the majority present in regard to it.

Dr. Jones: My idea is this, that there are a great many members here who desire to read papers, and if the Constitution and By-Laws were taken up at this time amendments would be offered and considerable discussion elicited, thus taking up much valuable time. I think the committee has made an excellent revision of the Constitution and By-Laws, and I believe the Association would adopt it promptly. But there are men here who are expected to read papers at a specified time, who have come a considerable distance and at a great sacrifice to themselves, and I trust this matter will be postponed.

Dr. Westmoreland: The adoption of the Constitution and By-Laws is the order of business for this morning. If we postpone it until to-morrow afternoon, or any other time, a great many of the members will not be here that are here now. The time to adopt the Constitution and By-Laws is when every man is present, so that he can express his opinions freely, and the majority of the members are here now. So I simply call for the regular order of business, which you cannot do away with unless you get a three-fourths vote.

Dr. Richardson: I agree with Dr. Jones that it is important to get through with the scientific part of the meeting. I am willing to risk the decision of the Association. I believe three-fourths of the members present will be in favor of postponing it until to-morrow.

Dr. Morgan: There is no question in my mind but what we have the right to further postpone this matter. This Association set an hour for this morning, and it becomes a regular order of business, but there was a regular order of business in the printed program that has priority, and we have a perfect right to postpone this until to-morrow at the hour suggested. I believe at least three-fourths of the members present will favor it. I therefore call for the question.

Dr. Richardson: I accept Dr. Jones's amendment.

The President then put the motion as amended, which was carried.

Dr. J. S. Todd, of Atlanta, then read a paper entitled, "Cause and Prevention of Tuberculosis. Is it a Curable Disease?"

Discussed by Drs. Richardson, Cortelyou, Kime, Chason, and in closing by Dr. Todd.

Dr. J. C. Olmsted, of Atlanta, contributed a paper on "Expert Testimony in Criminal Cases Involving the Plea of Insanity," which was read by Dr. Westmoreland in the absence of the author.

Discussed by Drs. Bizzell, Elliott, Lloyd, Ford, Todd, Noble, Westmoreland.

Dr. V. D. Lockhart, of Maysville, read a paper entitled "A Case of Cystocele Complicating Labor," which was discussed by Drs. C. H. Richardson, Greenwood, Chason, Scott, Kime, and in closing by the author of the paper.

At this juncture, the President introduced Dr. Hunter McGuire, of Richmond, Va., who made a few timely and exceedingly appropriate remarks.

Dr. Morgan moved that a hearty vote of thanks be accorded Dr. McGuire for his talk to the Association.

Dr. E. H. Richardson, of Atlanta, read a paper on "Atypical Fevers," which was discussed by Drs. Ford, Kime, and in closing by the author.

Dr. W. L. Champion, of Atlanta, followed with a paper on "Meddlesome Instrumentation in Urethral Diseases." Discussed by Dr. Olmsted.

Dr. E. R. Anthony, of Griffin, read a paper entitled "Relation of the State Board of Medical Examiners to the Profession of the State."

The discussion was opened by Dr. Olmsted, and continued by Drs. Todd, Jones, Doughty, Jr., and on motion of Dr. Jones, further discussion was postponed until the afternoon session.

On motion, the Association adjourned until 2:30 p. m.

SECOND DAY—AFTERNOON SESSION.

The Association reassembled at 2:30 p.m., and was called to order by the President.

The President stated that the first thing in order was the continuation of the discussion on Dr. Anthony's paper, but there was none.

Dr. Louis H. Jones, of Atlanta, read a paper entitled "Physical Signs and Diseases of the Lungs," which was discussed by Dr. Duncan, and the discussion closed by the essayist.

Dr. A. W. Stirling, of Atlanta, contributed a paper entitled "Remarks on Certain Ocular Disturbances of General Interest."

Discussed by Dr. Crawford.

The President called for the report of the Secretary, which was read by Dr. Taylor, as follows:

MACON, GA., April 22, 1897.

SECRETARY'S REPORT.

Mr. President and Gentlemen:

Your Secretary begs to submit the following report: Since the last meeting of this body he has expended for the Association the

sum of $28.71, and has received from the Treasurer the sum of $10, leaving a balance of $18.71 due the Secretary as per account submitted.

Respectfully submitted.

R. H. TAYLOR,
Secretary.

Dr. Goodrich, the Treasurer, read his report, as follows:

To the Medical Association of Georgia:

Gentlemen:—In making my report, I wish to congratulate the Association on our excellent financial condition, and to thank the members for their uniform courtesy. I have collected more past dues this year than ever before.

The statement is as follows:

Dr.

To balance on hand as per last report	$ 566 16
To amount received from all sources during year	1,888 24
	$2,454 40

Cr.

By amount paid out during year as per vouchers accompanying	$2,021 34
Having balance on hand of	$ 433 06

Respectfully submitted.

E. C. GOODRICH, Treasurer.

On motion, these reports were referred to an Auditing Committee consisting of Drs. Barron, Foster and Hicks.

The Auditing Committee subsequently made the following report:

The undersigned, your Auditing Committee, respectfully report that we have examined the books of the Treasurer and find them correctly kept and the money properly accounted for. Balance from last year $433.06.

The Secretary's books are neatly and correctly kept, and the Secretary has accounted for all money handled.

We recommend that the Treasurer be paid $200 honorarium for services during the year just closed, and the Secretary be paid $150, and the stenographer $100, and that the expenses of these

officials in attending this meeting be paid in addition to the above named sums.

R. B. BARRON,
EUGENE FOSTER,
CHAS. HICKS,
Auditing Committee.

On motion of Dr. Duncan, the report of the Auditing Committee was adopted.

Dr. Samuel Lloyd then gave a demonstration of the Roentgen rays.

On motion, the Association adjourned.

THIRD DAY—MORNING SESSION.

The Association met at 9 a. m., and was called to order by the President.

The President called for the report of the Committee on Prize Essay. No report was made.

Under the head of "Communications" the Secretary read a letter from Dr. Joseph Price regretting his inability to attend the meeting.

The Secretary read a letter from the citizens of Brunswick inviting the Association to hold its next meeting in that city in 1898. He also read an invitation from Mr. Park, President of the New Cumberland Island Co., asking the Association to meet on Cumberland Island in 1898.

A communication was read from Dr. E. G. Roddick, of Montreal, asking the Association to send a representative to the forthcoming meeting of the British Medical Association, to be held in that city.

The Secretary read resolutions from and which were adopted by the Medical Society of Bernalillo county, New Mexico, in relation to the weather bureau in reference to medical climatology.

The Society instructed the President to appoint dele-

gates to the British Medical Association, but took no action on the resolutions.

Dr. R. M. Harbin, of Rome, then read a paper entitled "Rapid Dilatation of the Uterus a Conservative Operation." Discussed by Drs. Kime, Hurt, and in closing by the author of the paper.

Dr. W. S. Goldsmith, of Atlanta, followed with a paper entitled "Remarks on Fistula in Ano."

This paper was discussed by Drs. Morgan, Champion, Horsley, Hardman, and in closing by Dr. Goldsmith.

A paper on "Appendicitis" was read by Dr. Hunter McGuire, of Richmond, Va.

The discussion on it was opened by Dr. Lloyd, of New York, and continued by Drs. Elliott, McHatton, Doughty, Richardson, Horsley, Foster, Hardman, Noble and the discussion closed by Dr. McGuire.

The Board of Censors made the following report:

The board yesterday approved the application of Dr. P. L. Hilsman, of Albany, furnished by the Secretary. It turns out that Dr. Hilsman has been a member in good standing for years. The mistake arose on account of Dr. Hilsman handing the Secretary $5 and entering an application for membership to the American Medical Association. The Secretary's attention has been called to this mistake.

One application was passed over because of absence of proper and satisfactory vouching. The Secretary is requested to refund the gentleman's money.

The board, in a spirit of friendliness and a desire to elevate the tone of the profession, have investigated quite a number of complaints against members of the Association. It is the sincere wish of the board that their action in these matters will prove of benefit to the Association.

The Board of Censors desire to call attention of a certain class of physicians to the following clause of the Code of Ethics:

"It is derogatory to the dignity of the profession to resort to advertisement or private cards, or hand-bills, inviting the attention of individuals affected with particular diseases, etc." (See Transactions, p. 327, 1896, section 3.)

Now, the question of signs is a point in particular, and a mem-

ber has been instructed to call the attention of a practitioner in an adjoining city to this matter and have him come within the line. Others are requested to take notice of this action. If it is not followed out, it is feared the board will have some unpleasant work to do next year.

Dr. J. F. Alexander was stricken from the honorary list for cause.

Resolved, That as the facts are proven to this board that Dr. R. W. Trotter did make formal application for membership in the Georgia Medical Association in 1894, that at the time he paid his fee and was properly vouched for, and on account of some oversight his name has never been entered as a member, we recommend him for membership.

On motion, the report of the Board of Censors was adopted.

Dr. Morgan moved that the thanks of the Association be extended to the Board of Censors for their efficient and laborious work during the meeting.

Seconded and carried.

The next thing in order was the election of officers for the ensuing year.

The President appointed as tellers Drs. Hurt and Elliott.

The election resulted as follows:

President: Dr. J. B. Morgan, Augusta.

First Vice-President: Dr. L. G. Hardman, Harmony Grove.

Second Vice-President: Dr. J. L. Hiers, Savannah.

The President: There is a vacancy on the Board of Censors. I believe Dr. Hicks's term expires with this meeting, and you will prepare for an election to fill the vacancy.

Dr. Westmoreland: I rise to a point of order.

The President: Please state your point of order.

Dr. Westmoreland: Dr. Hicks was elected at the Savannah meeting for the term of five years.

The Secretary was asked whether he had a copy of the Transactions for 1895. He replied that he had not.

Dr. Morgan: Dr. Hicks seems to have been elected to fill an unexpired term.

Dr. Barron: Dr. Williams was elected for five years at the Savannah meeting, and Dr. Hicks to fill an unexpired term.

Dr. Foster: I believe the records of the Association will show this, from which there can be no appeal. The records are the official action of the Society. I have heard several gentlemen say that Dr. Hicks was elected to fill the unexpired term, and Dr. Williams for the full term.

Dr. Drake: I move that we proceed to the election of a Censor to fill the expired term of Dr. Hicks.

Seconded.

The Secretary: I would state that the list of officers, with the terms of censors, as they are published in the volume of Transactions for 1896, was submitted to the Committee on Publication by the Secretary after he had received his report from the stenographer. It was approved by the Publication Committee and published in the Transactions as you see it in the volume for 1896.

Dr. Westmoreland: I would ask the Secretary if he does not know that the record is incorrect.

The Secretary: If there is any error in the record regarding this matter, it was made before I was elected Secretary. I really believed that it was right.

Dr. Drake's motion was then put and carried.

The Society then proceeded to elect a member to fill the vacancy on the Board of Censors, which resulted in the election of Dr. Hicks for the term of five years.

Dr. Williams: I desire to make a motion that the Transactions of 1895 relative to this matter be carefully examined, and that a committee be appointed to investigate it and report at the next meeting simply as a matter of record, in order that the records of the Association may be straightened out. In 1895, at the Savannah meeting, Drs. Hicks,

McMaster and myself were elected on the Board of Censors without any statement as to the term of service.

Seconded.

Dr. Drake: I move, as an amendment, that the committee to be appointed report immediately at this meeting, if possible.

Seconded.

Dr. Williams: It is impossible to do that.

Dr. Foster: I move, as a substitute, that the Board of Censors, with their terms as laid down in the Transactions, be formally ratified by this Association. I refer now to the Transactions of 1896. My position is this: The Transactions of 1896 are the official record of the Association, and we have no right to appeal unless an error can be shown to exist. The way to straighten this matter out is to formally ratify the report.

Dr. Drake: Two wrongs do not make a right. If there was an error committed in 1896, and the records of 1895 were correct, then this body has a right to amend its action in 1897 by correcting it to conform to what was right in 1895. The motion is consistent with the conditions that we find in the Transactions as published by the Association, and I support it very cordially.

The substitute was seconded by Dr. Elliott.

The President: I understand that Dr. Williams's motion is to gather information and report back to the Society so that it can take action on it, and I shall be glad under the circumstances if Dr. Foster will withdraw his substitute in order to facilitate work.

Dr. Goodrich: By some mistake the Secretary or the Publication Committee made an error in the volume of Transactions of 1895 in not entering the censors who were elected in regular order, and putting it in the volume of 1896. But they did the best they could from the information at their command.

Dr. Taylor: As Dr. Goodrich has just stated, at the Savannah meeting, when Dr. Howell was Secretary, he failed to get the time when the terms of the members of the Board of Censors expired. With the consent of the Committee on Publication, who is the highest authority for ratifying these minutes, the matter was so referred, and the committee at that time trusted largely to memory. Every member of the Publication Committee was present at the Savannah meeting, and from their understanding the terms of service of the censors were fixed as published in the Transactions of 1896.

Dr. Foster's substitute was then put and carried.

The next thing in order was the consideration of the Constitution and By-Laws, but before the Secretary proceeded to read the Constitution, the President said: "Under the present Constitution and By-Laws all amendments to the Constitution must lie over for one year. Amendments presented at this meeting will be received, but final action will not be taken upon them at this meeting. If it is your pleasure to have the Constitution read, we will have it done by the Secretary."

Dr. Drake: I move that we postpone the consideration of the report of the Committee on Constitution and By-Laws until 2:30 p. m.

Dr. Kime: I move that the Constitution and By-Laws be placed on record with any amendments that any of the members may see fit to put in writing, and that they be published and adopted at the next meeting, and a copy furnished to each member of the Association.

Seconded.

Dr. Drake: I understand that a committee was appointed last year to revise the Constitution and By-Laws, and this committee has presented its report, which has been accepted by this body. It is now in order for any amendments to be offered, and I do not see why they should lie

over until next year. I believe they can be acted upon at this time. It is now in order, it seems to me, to adopt or otherwise dispose of the committee's report.

The President: These amendments were not presented last year. No member has a right to present amendments in the interval of the meeting. The Association would not recognize the principle of allowing any committee to bring amendments before it without full authority. I shall therefore rule that these amendments were not accepted by this Association until presented by the report of the committee on the first day. These amendments and such other amendments as may be made at this meeting must lie over until the Constitution comes up for final action next year. The section plainly states that "any amendment that may be offered to the Constitution shall lie over until the next annual meeting, and for its adoption at such meeting shall require a two-thirds vote of all present and voting." That is the ruling.

Dr. Drake: I would like to say that the ruling laid down by the President is intended simply for changes or amendments that may be presented at this meeting, and has no bearing upon amendments which the committee has offered which has been appointed and empowered to do this work.

Dr. Kime's motion was carried.

The next business before the Association was the reception of amendments to the By-Laws.

The President: I will state for the benefit of those members who make amendments to the Constitution, that they should be handed in to the Secretary, unless it is the pleasure of the Association to have them read.

Dr. Currie: Do you consider the changes made by the Committee on Revision of the Constitution and By-Laws in your rulings to-day?

The President: No. I am acting under the Constitution as published in the Transactions.

Dr. Foster: I move that the consideration of the By-Laws be laid over until next year; that they be printed in the Transactions, so that they can be read by the members and acted upon intelligently at that meeting.

Seconded.

On motion of Dr. Elliott, the Association adjourned until 2:30 p.m.

THIRD DAY—AFTERNOON SESSION.

The Association reassembled at 3 p.m., and was called to order by the President.

Dr. Drake: At the time of adjournment the question of the consideration of the Constitution and By-Laws was before the Association, and I now wish to move that its further consideration be postponed until 5:30 o'clock, in order to allow the presentation of papers which have yet to be read.

Seconded and carried.

Dr. L. C. LeHardy, of Savannah, read a paper entitled "An Act to Create a Commissioner of Health and Drainage for the State of Georgia."

Dr. J. D. Chason, of Iron City, read a paper on "Puerperal Septicemia, its Causes and Treatment."

Dr. J. H. Goss, of Athens, who was to have read a paper on "Puerperal Infection, Its Causes and Treatment," was absent, consequently his paper was read by title.

Dr. R. R. Kime, of Atlanta, read a paper entitled "The Present Status of Puerperal Infection."

These papers were discussed jointly by Drs. Drake, Currie, Bizzell, and the discussion closed by Dr. Chason.

Dr. J. L. Hiers, of Savannah, read a paper entitled "Iodine in Corneal Ulcers," which was discussed by Drs. Craw-

ford, Horine, Stapler, and the discussion closed by the essayist.

Dr. J. M. Crawford, of Atlanta, followed with a paper entitled "A Successful Rhinoplastic Operation for Extensive Destruction of the Nose; Removal of the Ossicles for Chronic Suppurative Aural Catarrh; Cure."

Discussed by Drs. Shorter, Horine, Hiers, and in closing by the essayist.

Dr. Geo. Horine, of Americus, read a paper entitled "Lupus of the Nose, Its Medical and Surgical Treatment."

Discussed by Drs. Crawford, Hiers and Currie.

Dr. Geo. H. Noble, of Atlanta, reported an interesting case of "Complete Eversion of Vagina, Uterus, Bladder and Rectum; Restored by Operation."

The next thing in order was new business.

Dr. Bizzell: Under that head I wish to present a motion for the appointment of a committee for a specific purpose, to report upon the most feasible plan for the introduction of expert testimony in court cases. I wish also to add that this committee shall be instructed to point out all violations of the law regulating the practice of medicine; said committee to consist of nine members, appointed by the chair, whose term of office shall be as follows: Three for one year, three for two years, three for three years.

I sincerely hope that this motion will meet with the support of the members of this Association. The subject of expert testimony was thoroughly discussed the other day and its merits pointed out. It is well known that in almost every county within the State that the law now governing the practice of medicine is violated. There is no one called upon to point out these violations of the law and prescribe a remedy for them. If a man is my neighbor he is equally responsible for any irregularity that he may commit. This committee will have then two duties to perform, and

I am sure the selection of the committee by the chair will be a good one.

Seconded.

The President: I think there can be some improvement in the wording with reference to the appointment, for there is no provision for reappointment as it now reads. Unless some remedy is adopted, the committee would dwindle away, and each year three new men would be appointed by the Association.

Carried.

Dr. C. M. Drake: Mr. President, Dr. Kime left with me a resolution to present to this body in reference to the appointment of a committee. This resolution reads as follows:

Resolutions introduced by Dr. B. W. Bizzell, Atlanta, Ga., providing for the appointment of a Legislative Committee:

Resolved, That a central committee of nine members of this Association be appointed by the chair, whose term of office shall be as follows: Three for one year, three for two years and three for three years, appointing three new members each year to fill expired terms of office.

1. Whose duty it shall be to frame and present to the next legislature the most feasible plan for the introduction in court for medical expert testimony in criminal cases.

2. To report and prosecute all violations of the State law governing the practice of medicine.

3. The Central Committee to organize sub-committees in each county whose duty it shall be to assist in the framing and passage of a bill, and report all irregularities and violations of existing medical laws in their respective counties.

4. It shall be the duty of said Central Committee to meet in Atlanta during the meeting of the next legislature or such other time as is deemed best to present and assist the passage of this bill.

5. That these sub-committees, the Central Committee concurring, are hereby empowered and directed to construct, frame and adopt such measures as may seem best suited.

6. That this Central Committee be subservient to the State Medical Association and shall report to that body each year in annual session.

AMENDMENT TO RESOLUTION OFFERED BY DR. KIME, OF ATLANTA:

1. *Resolved*, That the above committee provided for by Dr. Bizzell's resolution shall also frame and present to the Medical Association at its next meeting the most feasible plan for the prevention and spread of tuberculosis.

2. Also to report upon the most feasible plan for preventing the law now providing for a State Board of Medical Examiners being repealed, reporting fully to the State Association at the next annual session any and all points affecting this bill and the workings of said Board of Examiners.

Dr. Drake: I would make the motion that the committee be made nine in number, so as to help the committee which Dr. Bizzell has suggested. In other words, I make this motion to cover the matter, that in addition to the duties of the committee already suggested by Dr. Bizzell, they shall take up the matter of legislation for the prevention of tuberculosis.

Seconded.

Dr. Bizzell: It strikes me that my plan of forming this committee is best suited for working out the greatest amount of good. However, I desire to second the motion to add the matter of legislation for the prevention of tuberculosis to the other duties of the committee.

Carried.

The President: We will now pass to the consideration of the report of the Committee on Constitution and By-Laws.

Dr. Moore: I move that action on the Constitution and By-Laws be deferred until the next regular meeting.

Seconded.

Dr. Drake: I think we had better consider this matter now. It has been said that the old Constitution under which the Society has been working is unsatisfactory; that amendments have been made to it from time to time which have been adopted, but have not been incorporated in their proper place. We need something as a guide. We ought

to have a Constitution that is satisfactory to all members. This is the only interest I take in it. I regret very much to have this matter postponed for another year, when it is of such vital importance to us. It ought to be acted upon now.

Dr. Currie: I do not see why we could not in a few minutes act upon the By-Laws, if the Constitution has to lie over a year, and get through with that much of it now. It is getting late. There are other matters to come before the Association of interest, and I do not think it is justice to the committee who have worked so diligently at different times for the last twelve months, to turn what they have done down to the extent of deferring action on their report for another twelve months. They ought to see the fruits of their labors ratified. We ought to take up at least the By-Laws and dispose of them.

The President then put the motion on postponing action on the By-Laws, and it was lost.

The Secretary then read the Constitution, as printed, and each article was adopted as read.

On motion of Dr. Drake, section 2, article 10, of the Constitution, was stricken out.

Dr. Drake: Inasmuch as the Constitution and By-Laws will finally be acted upon next year, I can see no consistency in proceeding with this matter any further.

Dr. Hiers: Inasmuch as the By-Laws are based on the Constitution, and the Constitution will not be finally adopted until the next meeting, I would therefore move that the By-Laws be deferred until the next annual meeting.

Seconded.

Dr. Morgan: I am in favor of that motion. If we change the Constitution next year, which is likely to be done in some parts at every meeting, we necessarily have to

change the By-Laws. I am in favor of postponing the consideration of the By-Laws until the next meeting.

Carried.

The President stated that the next thing for consideration was the next place of meeting.

The Secretary said two invitations had been received, one from Brunswick, the other from the New Cumberland Island Hotel Company.

On motion, Cumberland Island was selected as the next place of meeting.

Dr. Hiers: I desire to offer a resolution:

Resolved, That we, the Medical Association of Georgia, heartily appreciate the constant and marked courtesies extended to us by the local profession and citizens of the city of Macon during our session drawing to a close, and that we will each of us carry to our homes the most pleasant recollections of our stay in Georgia's Central City; that we also express our thanks to the railroads and transportation companies for their kindness in giving us reduced rates.

Seconded and unanimously carried.

Dr. Moore: I wish to offer a resolution:

Resolved, That this Association recommends the passage by the Legislature of an act to create a Commissioner of Health and Drainage for the State of Georgia.

Seconded.

Dr. Morgan: I wish to offer as a substitute that the Association appoint as a committee of one Dr. LeHardy, who is conversant with the question, has given it a great deal of attention, and is one of the best authorities in the South, and to properly bring it to the attention of the public and the legislature at the next meeting. This gives him the indorsement of the Association.

Seconded and carried.

The President-elect was then escorted to the chair.

The retiring President said: "I feel a great deal of satis-

faction in having had the honor to preside over the greatest meeting in the history of the Association, and I desire to return to you my thanks for the interest you have displayed and thanks to the various committees that have worked unceasingly throughout the year to make this meeting a success. It is my earnest hope that you will appreciate more fully what has been done and will continue to give your earnest co-operation to the newly elected officers, who are fully competent to carry forward the good work and give us grander results than what we have yet achieved. It is with much pleasure that I present to you your new President, upon whom the responsibility of this office now rests." [Applause.]

The President-elect, Dr. Morgan, was warmly received on rising to speak. He said:

"Mr. President, and Gentlemen: Words are entirely inadequate to express the high appreciation for the honor this Association has conferred upon me. It is a high honor, one worthy the aspiration of any physician in this country. I consider it one of the highest honors that can fall to the lot of a medical man in this State, to be President of this Association. This honor came to me absolutely unsought and unexpected. You probably have bestowed it upon unworthy shoulders. No one man can make a success of this Association; but if the President, be he whoever he may, has the hearty co-operation of the members, he can make it a grand success.

"Our retiring President has set a high standard for us, one that is exceedingly difficult to equal, and almost impossible to excel, and all I can possibly promise you is that my very best efforts shall be devoted to keeping it up with this high standard, and I shall expect your entire hearty co-operation in everything. I shall call upon you freely, as I regard the President of this Association as the servant of it, elected to this office, not to honor himself, but to carry

out the wishes and the best interests of the Association. Regarding the trust as such, I will do all in my power to make our next year as prosperous as this one has been." [Applause.]

Dr. Hiers also made a brief speech, thanking the Association for electing him one of the Vice-Presidents.

On motion of Dr. Drake, a vote of thanks was extended to the Macon Medical Society for its hospitality, entertainment and kind treatment of the Medical Association of Georgia at its meeting here.

Seconded and carried.

The President said that it was necessary to have a Committee of Arrangements for next year.

Dr. Moore said that inasmuch as Cumberland Island had been selected as the place of meeting, it would be wise to confer with the Cumberland Island Hotel Company as to arrangements, etc.

The President appointed the following delegates to the American Medical Association:

Wm. H. Doughty.....Augusta
J. C. King.....Newnan
E. C. Goodrich.....Augusta
J. H. Shorter.....Macon
J. B. S. Holmes.....Atlanta
J. B. Morgan.....Augusta
Wm. H. Elliott.....Savannah
T. D. Walker.....Cochran
Wm. O'Daniel.....Bullards
G. W. Mulligan.....Washington
Eugene Foster.....Augusta
R. B. Barron.....Macon
Chas. C. Hicks.....Dublin
H. McHatton.....Macon
J. W. Bailey.....Gainesville

A. W. Calhoun.....Atlanta
B. R. Doster, Jr.....Blakely
F. W. McRae.....Atlanta
H. F. Scott.....Atlanta
J. H. Goss.....Athens
R. R. Kime.....Atlanta
L. G. Hardman.....Harmony Grove
J. W. Eberhart.....Hartwell
H. R. Slack.....LaGrange
L. H. Jones.....Atlanta
Geo. H. Noble.....Atlanta
W. F. Westmoreland.....Atlanta
R. H. Taylor.....Griffin
H. P. Cooper.....Atlanta
A. M. Burt.....Macon
J. H. Duggan.....Stephensville
K. P. Moore.....Macon

The following papers were read by title:

1. "A Study of the Refraction of One Thousand Eyes," by Dr. C. H. Peete, of Macon.
2. "Impurities of Drinking Water," by Dr. C. B. Hurt, of Atlanta.
3. "Functional Weakness in Organically Healthy Eyes," by Dr. J. H. Shorter, of Macon.
4. "Some Amusing Instances of Nasal Reflex," by Dr. A. G. Hobbs, of Atlanta.
5. "The Neuroses of Children," by Dr. Catherine Collins, of Atlanta.
6. "Some Recent Surgical Cases," by Dr. Hunter P. Cooper, of Atlanta.
7. "Cystitis," by Dr. Frank M. Ridley, of LaGrange.
8. "Fractures of Skull, with Report of Cases," by Dr. W. B. Tate, of Tate.

9. "The Induction of Premature Labor in the Interest of the Mother and Child," by Dr. E. R. Corson, of Savannah.
10. "Obstetric Surgery," by Dr. Joseph Eve Allen, of Augusta.
11. "Ascites in Abdominal Surgery," by Dr. Virgil O. Hardon, of Atlanta.
12. "The Treatment of Pleuritis," by Dr. Newt. Anderson, of Eudora.
13. "Laparo-Hysterotomy, Report of a Successful Case, and a Plea for its More Frequent Adoption," by Dr. A. Moody Burt, of Sparta.
14. "Hernia," by Dr. W. F. Westmoreland, of Atlanta.
15. "Puerperal Infection, its Causes and Treatment," by Dr. I. H. Goss, of Athens.
16. "Spinal Paralysis," by Dr. W. J. Cox, of Barnesville.
17. "Some Practical Suggestions in Regard to the Tongue, Pulse and Temperature," by Dr. W. S. Kendrick, of Atlanta.
18. "Morphine and its Effects," by Dr. Addison K. Bell, of Madison.
19. "Some Remarks on the Treatment of Chronic Otorrhea," by Dr. Dunbar Roy, of Atlanta.
20. "Keratitis Parenchymatosa, a Review of Seven Cases," by Dr. T. E. Mitchell, of Columbus.
21. "Report of a Case of Extra-uterine Pregnancy," by Dr. J. R. Shannon, of Cabaniss.
22. "Report of Case of Empyema in Infant, Aged Seven Months, with Operation and Recovery," by Dr. T. R. Garlinton, of Rome.
23. "Fracture of the Skull, with Report of Cases," by Dr. W. S. Elkin, of Atlanta.
24. "Chorea," by Dr. Hugh Hagan, of Atlanta.
25. "Report of Case of Central Laceration of Perineum Case," by Dr. W. A. Crowe, of Atlanta.

26. "Dermoid Cyst of the Bladder, with the Report of Case," by Dr. W. A. Crowe, of Atlanta.
27. "Hemorrhagic Fever," by Dr. L. P. Hudson, of Cochran.
28. "Acranial Monster, with Specimen and Report of Case," Dr. W. P. Williams, of Blackshear.
29. "Quinine Blindness," by Dr. A. W. Calhoun, of Atlanta.
30. "Infant Mortality," by Dr. E. Van Goidtsnoven of Atlanta.
31. "LaGrippe," by Dr. W. C. Lyle, of Augusta.
32. "History of Epidemics," by Dr. Marcus F. Carson, of Griffin.

There being no further business, the Association, on motion, adjourned to meet on Cumberland Island, the third Wednesday in April, 1897.

ENTERO-COLITIS OF INFANCY.

By M. A. CLARK, A.M., M.D., Macon, Ga.

When we consider how many little lives are sacrificed by this dread disease, we are impressed that it cannot be too often discussed. Hence, if I do no more than emphasize what has already been taught in regard to it, I shall not have imposed upon the time of this Association.

It is my purpose to give you my views as the result of a careful study of numerous cases. I shall devote the most of my time to the treatment, it being the most important part of the disease.

I prefer the term entero-colitis to intestinal catarrh, because it more fully conveys what the pathology of the disease is. While in adults and children we recognize enteritis and colitis as separate and distinct diseases, yet in infants the symptoms are not sufficiently well marked to enable us to differentiate them. In fact, as J. Lewis Smith says, "In the majority of instances there exists an inflammation of both the small and large intestines, the one rarely existing without the other."

This inflammation may be ulcerative, membranous, or, as is more frequently the case, a simple inflammation of the mucous and submucous linings of the intestines.

Causation.—Cold is often the cause of intero-colitis, and, in a majority of the severer cases, it plays an important part. The most important factors, however, in the causation of this disease are temperature and diet.

The summer heat without doubt influences very mark-

edly the cause of this disease, as it invariably occurs in its intensity during the summer months. It is most fatal during July and August, and abates as cooler weather comes on. It is, however, not so much the heat itself as the effect it has upon the atmosphere and the diet.

After all, it is the diet that is the most important cause. This is proven by the fact that the majority of fatal cases are bottle-fed infants. Of 1,943 fatal cases reported by Holt, only three per cent. were wholly breast-fed. All writers agree that outside of the cities, especially in the rural districts, it is of far less severity. Some seem to think it of little importance in these districts. We will all readily agree that it is far more fatal in cities, but we must insist that its gravity is such as to cause us deep concern in our towns and villages. In this fast age of ours so many mothers are unable to nurse their babies, that artificial feeding must be relied upon. Consequently entero-colitis is now a disease that demands careful thought and attention, even by the country practitioner.

Age is a predisposing cause. The greatest number of cases occur between six and eighteen months. It is less frequent up to the third year, after which it is rare.

Teething is usually given as a predisposing cause. Some authors even go so far as to explain that the excess of salts in the saliva produces a diarrhea that is beneficial to the patient. How often it has been said that the baby is sick with teething. Even the physician, in answer to the question of the anxious mother as to what is the matter with the baby, replies, "teething." It is proverbial with the laity that the second summer is very trying with infants, because they are cutting teeth. I wish to say most emphatically teething is wholly a physiological process, and has nothing to do with the cause of this disease.

During the process of dentition, nature is preparing the alimentary canal for the important functions of digestion,

and because of this evolutionary process, the whole mucous membrane is susceptible to the slightest irritant. The teeth have absolutely nothing to do with this process, and if kept clean and sound have nothing to do with the bowel troubles of infancy. Let us use every available opportunity to eradicate such ideas from the minds of the laity. Many little lives have been allowed to languish and die because their mothers thought they had to be sick while teething.

According to Booker and Vaughan, bacteria are found in the stools. Hence there is no doubt that bacteria play an important part in the cause of the bowel diseases of infancy.

Symptoms.—Onset is usually gradual, languor, fretfulness, and slight rise of temperature. The diarrhea is so mild at first, that it is considered of no importance, so thoroughly prevalent is that erroneous idea that the bowels must be loose during dentition. Let us impress upon all mothers that any diarrhea, however slight, during teething is a symptom of disease, and should have the attention of the physician. By thus acting, we will save ourselves many anxious moments, and relieve many little sufferers before it is too late.

The stools are variable, at first yellow, then brown, then green, or they may be green from the onset. At first there may be considerable fecal matter, then stools become small with mucous and blood, sometimes pus and shreds of membrane. The blood is usually from congestion of blood-vessels and straining. In mild cases from five to six stools in twenty-four hours; in severe cases from twenty to thirty.

If inflammation extends to the rectum, there is pain and burning before and after stools.

Temperature is usually slight, but frequently runs up to 102 or 103 degrees Fah. After a prolonged attack, it may be sub-normal.

The tongue is first moist and covered by a brownish or

grayish fur, then becomes dry, and in severe cases red and swollen.

Vomiting is not apt to occur until after the first week, unless the stomach is involved. Persistent vomiting is usually a grave symptom.

The skin is dry and cool, except over the bowels, where it is hot. It is always cool in the stage of collapse.

Thirst is usually marked, especially when stools are very frequent and fever high.

Pulse varies with the intensity of the disease. Boils and erythema are frequent complications.

Hypostatic congestion of the lungs, with cough, may result from prolonged recumbency and enfeebled heart's action.

Spurious hydrocephalus is ushered in with vomiting, rolling of eyes, tossing of head, mouth open, eager to drink anything offered, even nauseous doses, drowsiness, stupor, pulse frequent and feeble, usually followed by death.

If case is mild, recovery results in two or three weeks. Severe cases may run on five or six weeks, as subacute or chronic.

Diagnosis.—By careful attention to the symptoms and history of the case, diagnosis is usually easy.

Prognosis.—Mild cases tend to recovery. When complicated by bronchitis, hypostatic pneumonia or gastritis, the prognosis is grave. Spurious hydrocephalus is always very grave.

Treatment.—The first and most important duty of the physician is to prevent disease. So in this disease, as well as all others, we must first consider preventive treatment.

Clothing.—I wish to emphasize this proposition—every infant should wear throughout all seasons flannel next to the body until the period of infancy is past and childhood well established. Indeed, I would hardly go wrong to say

that every human being should wear flannel next to the body, every day and all day. It is hardly necessary for me to call your attention to the protection given by wearing flannel next to the body. Do not be content with the usual flannel skirt, but see that there is a close-fitting flannel garment extending over the whole chest and whole abdomen.

It is no infrequent thing to see lying on the floor, kicking up its heels, a little babe, with no clothing on the bowels save a thin cotton dress. As a result, the bowels become chilled, and thus often begins a troublesome bowel disease. While this may not of itself cause a serious entero-colitis, yet it so affects the bowels that the slightest irritant precipitates the grave disease. Insist too that the flannel must be worn at night, this being more necessary than in the day. This may seem to be very unnecessary instruction. Allow me to remark that the careful observance of little things will often enable us to prevent the graver symptoms of disease. In the treatment of every infant, instruct the mother as if she knows nothing of the management of infants. Away with the false idea that old women know more about managing babes than the doctors know.

Diet.—The all important factor, not only in the cause of this disease, but also in the cure of it after it is produced, is diet. In the majority of cases the infant is bottle-fed, yet we find some severe cases that are breast-fed. In every case we must examine the milk to see that it is suitable, and when not, have the diet changed at once. In those dependent upon artificial feeding, the finding of a suitable food is no small undertaking. All are agreed that next to mother's milk, cow's milk is the best food for infancy.

The many ways of preparing the milk have been so well shown by Smith, Roteh, Holt, and others, that I need only refer you to their valuable works. Yet we must bear in mind that each case is an individual one and must be treated as such. No fixed rules can be formulated. The phy-

sician must be attentive and studious and must use the very best judgment and skill.

In the large cities where the scientifically prepared laboratory foods are available, the problem of diet is much more easily solved, and the benefit to the sick is indeed great. With us it is different. We must instruct the mothers how to prepare the diet and must depend upon their following our instruction.

When I know the milk has not been exposed to foul air, I prefer pasteurizing to sterilizing it because it is more palatable and more easily digested. In no case do I give the milk alone, but always diluted with some cereal, preferably barley-water. In infants under one year, I use equal parts of fresh sweet milk and barley-water; over one year, two or three of milk to one of barley-water. It should be given at regular intervals and in small quantities. This is very important.

In severe cases where the milk thus prepared does not agree with the patient, after adding the barley-water, predigest with extract of pancreas and sodium bicarbonate. If this is not assimilated, and especially if there is vomiting, give *no milk at all.* Then we must resort to some prepared food. Often a little barley or rice-water with the white of an egg and a little salt is well born and is nutritious. I have had excellent results from the use of bovinine, ten to twenty drops in a little water every two or three hours. Horlick's malted milk is a most excellent preparation, and when properly diluted and frozen, it is taken with eagerness by the little sufferer and is well assimilated. Milk prepared according to Rudisch's method, a half teaspoonful of dilute hydrochloric acid to a pint of water and a quart of milk is often well taken.

In every case the physician must have at his command all available resources and must use his brains to enable him to decide what is best suited to that special case. As

Jacobi has wisely remarked: "No fixed rule can supply the place of brains."

So much has been said by authors about the cleansing of the bottle and nipple, that it is not necessary for me to more than mention it. Allow me to say that the physician who allows the babe to use the rubber tube attachment is guilty not only of the grossest carelessness, but also of the death of his patient, for indeed the babe who must take its food through this most certain source of infection must needs die. Because of the ease with which it is kept clean, I advise the use of the bottle called "The Best."

Where the child is more than one year of age, I advise the feeding with a spoon because of the difficulty of getting the bottle and nipple well cleansed.

Medicine.—At the onset of the disease, when the tongue is heavily coated and the stools of a greenish color, a laxative is usually indicated. For a child under one year, I prefer the following:

℞ Salol . . . . . gr. x.
Hydrarg. cum creta . . . . . gr. xv.
Sacchari albi. . . . . gr. xij.
M. et ft chartular . . . . . gr. xij.
Sig. One powder every two hours.

In this I get the laxative and antiseptic effects of the mercury and the antiseptic effects of the salol.

It is claimed by some that no good results from the use of salol. I am sure, however, that I have had decided results and no bad effects from its use during the first stage of the disease.

I then give to a child under one year the following:

℞ Tannigen . . . . . gr. xx.
Pul. Peptenzyme . . . . . gr. xxx.
Syr. Aurantii . . . . . ℥iv.
Aquæ q. s. . . . . ℥ij.
M. Sig. One teaspoonful every two or three hours to control bowels.

I find tannigen a most valuable remedy for any diarrhea.

It is insoluble in the stomach and in the intestines is converted into tannic acid, the best astringent. By its use I have overcome what would have proved to be prolonged and severe attacks of this disease. The peptenzyme is an aid to digestion and tends to suppress nausea.

In severe cases I alternate with the following:

R Resorcini . . . . . gr. xx.
Bismuthi Subnitr . . . . . ℥vj.
Elix. Panpeptici . . . . . ℥j.
Syr. Aurantii q. s . . . . . ℥iij.
M. Sig. One teaspoonful every three or four hours.

Bismuth is par excellent when there is much tympanites. With regard to bismuth let me remark that we are often disappointed in its results because we give too small doses. I do not hesitate to give to a child of six months gr. xx of the subnitrate every two hours, when the stools are frequent and the bowels are tympanitic. The salicylate is recommended by some as being more antiseptic. I prefer the subnitrate, as I get better results from its use.

When the tannigen is pushed it is rarely necessary to resort to the bismuth. Give it till the bowels are checked, and then every four or six hours till the stools have resumed their natural color. Tannigen is both astringent and antiseptic, and will not only check the diarrhea, but will also destroy the fermentative changes taking place in the bowels. I do not claim that it will cure every case but, I do claim that if properly used, it will cure much more promptly than any other medicine.

If there is great pain, I add a little tinct. opii deod., but all opiates should be avoided if possible. It is better to allow the patient to suffer some pain than to be stupefied by opiates.

In connection with the foregoing medicines, I wash out the bowels thoroughly two or three times daily with Marchand's hydrozone 1 to 32 or 40, or hydrogen peroxide 1 to

16 or 20. I use a fountain syringe with a soft rubber catheter No. 23 or 24, or even larger may be used. Hold the syringe just high enough above the patient to allow a gentle flow. If the fever is high, I use the water barely tepid, sometimes cool water is better, as it reduces the temperature more readily. For general use, I have the water pleasantly warm.

In irrigating the bowels do not be afraid to use plenty of water. Use it freely, not till the bowels move, but till the water returns clear, showing that the bowels are well cleansed. The water removes all fecal matter and unhealthy mucus, and the hydrozone or peroxide of hydrogen destroys all sepsis and stimulates the intestine to a rapid return to its normal condition.

When there is a constant griping and much tympanites, I use the irrigation oftener, every two or three hours if necessary to keep the patient comfortable.

When nausea and vomiting become marked symptoms, leave off all medicine and allow no milk diet at all. Do not return to the milk diet till all vomiting has subsided.

Lime water has been extolled by all as the great antacid, the sovereign remedy to put with the milk to render it more readily retained and more easily digested. If you will consider how little lime is actually contained in the water, you will at once see that it is the dilution of the milk and not the lime that does good. Barley-water is far preferable.

In all cases of more than a week's duration, stimulation is indicated. For this purpose nothing equals alcohol, diluted of course. Never give alcohol or whiskey undiluted because of the irritant effects upon the mucous membrane of the stomach. There is no rule as to quantity. Each case must be a rule unto itself. Give it for its effects, not ill effects from overstimulation, but enough to support the vital powers. Do not wait till the patient is beginning to

show exhaustion before giving it, but give it to prevent exhaustion.

In those cases where there is marked emaciation and a tendency to spurious hydrocephalus, active stimulation is the only hope. If that fails to relieve, death must follow.

Thus with tannigen, the ideal intestinal astringent, bismuth the reliable antacid, water the great cleanser, and hydrozone the most potent antiseptic, with strict attention to diet and clothing, we may reasonably expect the majority of our cases to recover.

Discussion on Dr. Clark's Paper.

Dr. J. D. Chason, of Iron City: I have listened to the doctor's paper with a good deal of interest, and I wish to speak in reference to the use of stimulation in entero-colitis in infancy. When I began the use of stimulants in these cases, brandy was considered a good thing as well as whiskey. Whiskey, when it is diluted, is one of the best means we have to prevent nausea, in giving the medicine to an infant in that condition, and also tends to prevent hydrocephalus. Furthermore, in reference to the use of milk, milk may be prepared as a food either by sterilization or by dilution with the cereals or lime water, and it has been my experience that quite a number of cases would take cow's milk in no form or by any means that we have as yet at our disposal, and in this class of cases I have had success with Horlick's malted milk. I have found in a number of instances that the casein in cow's milk could not be digested by the stomach of the infant; that when the circulation was feeble hard masses would form and be rejected, while the use of barley-water and stimulant for a day or two would bring the child around so as to tolerate milk. In young infants I would especially recommend Horlick's malted milk.

I think the doctor's suggestion in reference to tannigen

is a good one, although there are quite a number of cases that tannigen will not reach on account of the pain and disturbance of the bowel. In some instances it will cause so much irritation and contraction that a certain amount of opiates has to be given to allay the tenesmus. In doing so I fully appreciate the fact that young infants stand opiates poorly. It is my rule, when I begin the use of opium, to guard it carefully with stimulants in all cases without exception, particularly in young infants. In an infant under six months old I never use an opiate preparation as strong as 10 per cent.; I never use the deodorized tincture at this age; I never use anything stronger than paragoric in those cases. I find, however, that an opiate must be administered in some cases in order to allay the tenesmus of the bowel which keeps up irritation to a certain extent and invites spurious hydrocephalus earlier. I find that the circulation of the infant is so poor that there is danger in the use of opiates unless carefully guarded.

In reference to the time of the year when we have most cases of entero-colitis, I find it to be in April and May, at the change of the spring to the summer, when we have cool nights and hot days. I think cold is as prolific a source of producing the disease as anything we have, yet I readily agree that improper diet for a child whose age is not prepared to receive it is a very fertile source of the trouble.

Dr. Clark (closing the discussion): I desire to say in reference to the tenesmus mentioned by Dr. Chason, that in my paper I could not treat of everything in the twenty minutes allotted to me for the reading of papers I have used a small amount of cocaine as a suppository or as an enema, and I find it will control any tenesmus which may occur in these cases. And so far as the irritating effects of the tannigen is concerned in an inflammatory condition of the bowels, if he gives it in proper doses he will find no irritating effects following its use. While I can conceive that

enough of the tannigen may be given to set up irritation, yet if administered in suitable doses, together with the solution of hydrozone or peroxide of hydrogen, there will be no necessity of causing any peristalsis or griping.

BLUE PYOKTANIN IN THE TREATMENT OF INOPERABLE MALIGNANT GROWTHS.

By HENRY R. SLACK, Ph.M., M.D., LaGrange, Ga.

There is no disease to which flesh is heir that so appeals to the sympathy of the physician as an inoperable case of cancer. Not even consumption's ghastly form is so dreadful to the patient and hopeless of results to the physician. The suffering from tuberculosis is almost invariably buoyed up by an ever-present but delusive hope that "as soon as I get rid of this heavy cold I will be all right"; but the poor cancer patient is bereft of hope. He sees the vulture, Prometheus-like, feeding upon his vitals, but has little hope of Hercules coming to the rescue.

Now, what are we to do in such cases? To dismiss them because we cannot promise cures would be inhuman and cowardly, for,

> "The paths of pain are thine, go forth
> With healing and with hope,
> The suffering of a sin-sick earth
> Shall give thee ample scope."

These patients should be *treated* on the same principles as those unfortunate beings afflicted with chronic nephritis, consumption or any other disease recognized as incurable.

When the surgeon admits that his knife can promise no hope, we should bring to bear upon the case every other means to make it *yield* to scientific treatment. Even though we may not effect a permanent cure, if we can alleviate the excruciating pains, restore hope, and prolong life, make it more tolerable, we perform a duty worthy of our

high calling and receive alike the gratitude of our patient and his friends; to say nothing of that highest of rewards, the approval of our conscience that comes from a knowledge of duty faithfully discharged.

Since the work of Professor von Mosetig of Vienna and Dr. Willy Meyer of New York with pyoktanin, Dr. Coley by the inoculation of erysipelas and others, we labor "not as those who have no hope."

In January, 1891, Professor von Mosetig presented a very instructive paper entitled "A Contribution to the Treatment of Inoperable Malignant Growths" to the Vienna Society of Physicians, reporting on his experience with blue pyoktanin in such cases. Shortly after (April 25, 1891) appeared an article from Dr. Willy Meyer in the *Medical Record*, "Notes on the Effect of the Aniline Dyes, Especially Blue Pyoktanin, in the Treatment of Inoperable Malignant Growths." Dr. Meyer also has another article on the same subject in the *Annals of Surgery* for November, 1893. Here I wish to acknowledge my obligations to Dr. Meyer for kindly furnishing me his valuable reprints and a list of the literature on this subject.

Billioth, true to his instincts as a great surgeon, had little faith in the use of pyoktanin, and did not believe it had any specific influence whatever. He claimed that it was merely the water forcibly pressed into the tissues made them swell and unable to live. He reported three of his patients got worse under its use and one died of sepsis.

Fortunately von Mosetig and Dr. Willy Meyer had better success, and my experience agrees with theirs, as a report of the following cases will show:

Case 1.—October 21, 1896, J. E. C., aged forty-three, white, male, farmer. Father died of cancer. Complains of sore throat and difficulty in swallowing for the last two months. Examination showed a neoplasm size of hickory-nut on the dorsum of the tongue a little left of the median

line. Has warty appearance and the papillæ all around are enlarged and indurated. Tumor can be felt from outside and submaxillary glands indurated.

October 24th. Tumor growing. Pain extends further down throat and deglutition more difficult. Treated with Lugol's solution iodine and gave gargle of same containing 2 m. carbolic acid to the ounce.

November 14th. Tumor getting larger, covered with a muco-pus and becoming more painful, especially at night. Necessary to use morphine in order to sleep.

November 19th. Complains that he could not sleep last night, as he liked to have choked to death. Iodine doing no good, so ordered blue pyoktanin pencil and powder of merck. Dr. F. M. Ridley saw the case in consultation. Decided inoperable and approved of the trial of pyoktanin.

December 8th. Patient has been to Atlanta and consulted six surgeons of that city, including two ex-presidents of this Association, one of whom he heard remark: "It is cancer. Prognosis bad, not one chance in a hundred from operation, and he won't live till New Year." Necrosis has begun, odor very offensive. The tumor is now as large as a hen's egg and very painful. Can hardly use tongue enough to articulate his words. Treated. Parenchymatous injection of 1.5 c.c. of a two per cent. solution of blue pyoktanin, and gave patient pencil to apply daily.

December 12th. Patient says he has not suffered so much as before using paint and can talk a little plainer. Treated: Injection of 1.5 c.c.

December 19th. Has suffered very little pain. Can talk without difficulty. Necrobiosis has set in and the tumor has diminished considerably. Injected 1.5 c.c.

December 22d. Patient improving. Small nodules beginning to drop off and under them granulating surfaces appear. Reduced about one fourth. Injected 1.5 c.c.

December 27th. Feels much better. Does not have to use morphine at all. Injected 1.5 c.c.

January 2d, 1897. Improvement continues. Tumor not one half as large as when I began parenchymatous injections. Injected 1.5 c.c.

January 9th. Patient feels much relieved. Cachexia nearly all gone. Fetid odor no longer present. Appetite returning and anxious to try solid food, which was allowed. Injected.

January 12th. Tumor has reduced to less than one fourth of the original size. Patient eats solids and swallows without difficulty. Color good and strength rapidly returning. Injected.

January 16th. Improvement continues. Injected.

January 23d. Feels no inconvenience from neoplasm, which is not over one-sixth of the original size. Says, "I am about well now." From then until February 28th he only received one injection weekly. I was called to New Orleans and was absent for two weeks, during which time patient took cold and I found on my return the neoplasm had grown some. Gave two injections weekly and necrobiosis at once began.

April 17th. Tumor diminishing in size, though somewhat painful. Pain was relieved by injection of the pyoktanin solution.

Case 2.—January 23d, 1897, R. H., aged thirty-seven, colored, female. Has had seven children, no miscarriages. Family history negative. Now has a four-months baby and since birth of this child lochia has continued. During first four months of last pregnancy had occasional hemorrhages. Patient fairly well nourished, though much weaker than after birth of other children. Prescribed injection of bichloride mercury 1 to 4000 and aromatic sulphuric acid and elixer calisaya as an astringent tonic, and told her to return in a week prepared for an examination.

February 3d. Patient said, "Do not bleed so much, but still have bad smelling discharge." Examination showed a large ulcerated cauliflower neoplasm enveloping the entire cervix and extending well up the posterior portion of the body of the uterus. It was as large as a small orange and bled freely when touched. Dr. Cason saw case with me and agreed that it was an inoperable carcinoma.

Treatment.—Washed out vagina and off the neoplasm with solution bichloride mercury 1 to 2000 and gave parenchymatous injection of 2 c.c. of a two per cent. solution of pyoktanin. I also gave the patient wash of bichloride mercury to be used daily, after which she uses 6 c.c. of one per cent. solution pyoktanin.

February 9th. All hemorrhage has ceased and patient feels better. Injected 2 c.c.

February 12th. Discharge not so offensive as before; pain has diminished. Injected 2 c.c.

February 16th. Improving. Necrobiosis established, and nodules are supported by smaller pedunicles. Injected.

February 19th. Improvement continues. Injected.

February 23d. Patient says when she injected the bichloride mercury wash small pieces of flesh size rice to pea are washed out. While treating a nodule size of large pea dropped off. Surface presents healthier appearance.

I have continued parenchymatous injections of 2 c.c. of the pyoktanin twice a week ever since. During my absence Dr. Cason kindly continued treatment and has since seen it several times. The size of the tumor is steadily diminishing and the patient now (April 17th) suffers absolutely no inconvenience.

Case 5.—April 6, 1897. Mrs. S. A. J., aged forty-seven, white. Had eight children, youngest three years. Family history negative. First trouble occurred when nursing last child. Three years ago noticed lump in right breast size of

marble that grew steadily. Breast was removed in May, 1895, and all healed up but a little place size of pea; this remained hard and in October began to ulcerate. Poorly nourished woman with recurrent cancer of right breast. Open ulcerating wound 10 c.m. long by 3.5 c.m. wide, eroded edges. Erosions being in some places 2 c.m. deep. The whole wound is covered with necrotic tissue and the cavities filled with a fetid cancerous secretion. The glands of the axillary region are indurated, painful and cancerous nodules depend from the wound near the axilla. The induration extends up to the clavicle and patient complains of pain in neck and on moving arm.

Treated.—Cleansed wound out thoroughly with hydrogen peroxide and then bichloride mercury. Gave parenchymatous injection of 2 c.c. of the 2 per cent. solution pyoktanin and then dusted the wound over thoroughly with a two per cent. powder.

April 10th. Has not suffered so much since using paint, and sleeps better. Treated.

April 13th. Rests easier now and has better use of arm. Treated.

April 17th. Complains of some pain, but after the injection this disappeared. There is softening in the injected area and general appearance of wound and patient has improved.

I have two other patients under treatment, one of the womb and the other of the breast, and both are improving. There seems to be a reasonable probability of the ulcerating uterus healing, at least the improvement since I began treatment with pyoktanin (March 15th) is marked.

Now, a word as to the technique of the treatment which varies with the location. The injection should be made under strict aseptic and antiseptic precautions. The skin where the needle is to enter should be thoroughly cleansed with bichloride solution. The needles may be long, short

or curved; but must not be too small caliber, and should be boiled after using.

I used the large hypodermic syringe and injected from 1 to 2 c.c. of a two per cent. solution. This is more than twice as strong as recommended by Dr. Meyer and von Mosetig.

The patient is given the pyoktanin pencil, one per cent. solution, or a two per cent. powder, as the case may require, to apply daily. Thus far I have seen no untoward effects from its use. I always employ Merck's because I can rely on its purity. The only objection to it is staining everything with which it comes in contact, but what is the soiling of linen when compared with the following advantages?

1st.—Its analgesic effects are marked as patients soon rest easily without the aid of morphine.

2d.—"The improvement of the function of the part involved." The man who could hardly speak so as to be understood talked without difficulty after the third injection.

3d.—The improvement in general health which has taken place in all five of my cases.

4th.—The element of hope that is added to the life of suffering men, brightening the remainder of their sojourn.

While I do not claim to have cured my patients, still I have relieved their pains and rendered them less burdensome to themselves and their friends.

I agree with Dr. Meyer in von Mosetig's conclusions, "that it has been proved by practice, that parenchymatous injections of inoperable malignant growths, with pyoktanin, can produce disappearance of malignant tissue, though in exceptional cases, and can heal neoplastic ulcerations."

Pyoktanin, when properly used, is certainly a palliative treatment for cancer that deserves an honest, hopeful trial, for by its use many have been relieved, and some cured.

DISCUSSION ON DR. SLACK'S PAPER.

Dr. Bernard Wolff, Atlanta: Mr. President—I heard only a part of the doctor's paper, and my experience is commensurate with the small portion of the paper which I heard. My experience in the use of pyoktanin has been limited to one case. The case was that of an old lady about sixty years of age, who had an epithelioma near the angle of the eyelid the size of a nickel, which overreached upon the tarsal cartilage. The patient declined a surgical operation for removal of the diseased area, and as a compromise measure, I suggested the use of yellow pyoktanin, which causes less disfigurement than the blue. The result was excellent. I used a ten per cent. solution, painted on the growth, and in about six weeks the growth disappeared entirely. I treated this case about three years ago, and as yet there has been no return of the disease. There was some cicatricial contraction which limited the elevation of the upper lid, so that there was produced what might be called a traumatic ptosis. I referred the case to an oculist, and I think the patient is still under treatment. That has been my only experience with the use of pyoktanin, and it is favorable. In the future, if I have any cases of epithelioma, particularly in the neighborhood of the eyelid, where Marsden's paste, and other pastes, cannot be used without injuring the eyeball, I shall again use pyoktanin. I prefer, however, from simply a cosmetic standpoint, the yellow pyoktanin to the blue. I have been favorably impressed with the report of the doctor's cases.

Dr. J. B. Morgan, Augusta: I have listened to Dr. Slack's paper, and the discussion which has ensued, with a great deal of interest. I have had some little experience in the use of pyoktanin, during the past year, having used it in five cases. I have employed it in every way that it

has been recommended for cancer of the uterus. I have tried the dry powder, used it as an injection, and employed it in the stick form; and for packing the uterus, after it has been curetted and cauterized, I frequently use pyoktanin gauze. I am fully satisfied, however, from carefully studying the effects of this remedy, that it has absolutely no curative effect, not the slightest. I think it is very probable that it does somewhat retard the progress of the disease, and in a slight degree lessen the pain.

I have adopted it now, as a routine practice, for cases of inoperable cancer, using at the same time opium internally. This probably gives us the best palliative treatment for inoperable cancer that we now have at our command. I shall continue to use and study it until I find something better.

Dr. Slack (closing the discussion): I do not claim to have cured any single case that I have had. The only claim I made was that is was a good palliative treatment, and that by the use of pyoktanin the neoplasm was very much diminished in size. In the case I reported, the growth has not as yet disappeared, but the man is living and doing well. While the pyoktanin may not cure, it does diminish the growth, but when the injections are stopped, the cancer grows again. If the injections are used twice a week, the tumor again subsides. How long it is going to keep the cancer under control, I am not prepared to state. So long as it does as much as it has for my patients, I shall continue the use of pyoktanin and recommend it to the profession.

Dr. C. C. Stockard, Atlanta: I have treated two cases of malignant growth with the use of methyl blue. This was about six years ago, and I am sorry Dr. Slack's cases have not been sufficiently long treated in order to determine what the results will be. As Dr. Lloyd has said, I think he will find that they are not cured, as they seem now to promise. In reading up the subject at the time the two

cases came under my observation, it was stated that in nearly every case there was marked improvement for a time following the use of pyoktanin, but that this improvement did not continue, and finally the patient got worse and died. I think, however, there is more likelihood of getting permanent results in cases of sarcomata than in other forms of malignant growth. One of my cases was cancer of the uterus, and I did nothing more than to remove the odor and to relieve pain. Pyoktanin does relieve pain and remove odor. The other case was one of multiple sarcoma of the skin, and after having tried to remove it with the knife, I found new nodules springing up before the wound healed, and I began with the injections of methyl blue. These injections would destroy the nodules, and there would be no return of the disease at the site of the injection, but other nodules would spring up around those that had been injected. It was in 1891 that I treated this case, and the man still lives, but the disease has now almost spread over his entire body. The last time I saw him was about two years ago. He received probably five hundred injections. One injection would destroy the nodule completely, but others would spring up around.

Dr. R. R. Kime, Atlanta: I wish to speak of one point with reference to the palliative treatment in cancer of the uterus or cervix. I have had but little experience so far as pyoktanin is concerned, but it seems to me we have a more certain palliative treatment for these conditions, one which causes the patient less pain and less trouble to yourself, and that is amputation of the cervix where this can be done, and the actual cautery properly applied; this will give more permanent relief and do the patient more good than to occasionally, once or twice a week, puncture the cervical tissue or the tissue around the cervix, thus favoring the spread of the disease by puncturing tissues so intimately connected by vascular and lymphatic supplies as the pelvic organs.

THE TREATMENT OF CUTANEOUS CANCERS.

By J. B. MORGAN, M.D., Augusta, Ga.

In discussing the treatment of skin cancers, it is well to understand at the commencement, that I do not intend or undertake to define the different varieties of cancer, or to discuss the different theories as to their etiology. This part of the subject is highly interesting and important, and has occupied some of the best thoughts of our brightest minds.

In the last four years, fully one hundred able and scientific papers have appeared in various languages, treating exclusively of the etiology of cancer.

We have neither time nor inclination to even refer to the various theories which have been propounded in attempted solution of this problem. But there are three of the recent theories of the etiology of cancer which it might be well to mention, since they are at present claiming more than passing attention throughout the scientific world, each having its plausible side and each its warm advocates.

"Asymmetric Cell Division in Cancer, and its Biologic Significance," is the title of a thesis by Hanseman, wherein the theory of indirect cell division is advanced.

The second theory, which has a great many advocates, who differ slightly, however, as to details, supposes that an intracellular, or intranuclear parasite—according to some a coccidium, to others a psorosperm, and still others a gregarina—infests the tissues, and through its presence induces a lawless growth of epithelial and connective tissue elements.

The parasite theory is the third one; this supposes that the cancer parasites are animals, and that there are no epithelial elements at all in these neoplasms; the polymorphous bodies found in the growth being, in reality, not epithelial cells, but the parasites themselves; and that these parasites produce a toxic substance known as cancroid, which is responsible for the so-called cachexia.

Such widely different ideas would seem to indicate that the final solution of the subject has not yet been reached. So far as the subject of this paper is concerned, the treatment here suggested is equally applicable, whichever one of these theories is accepted. For whether any of these theories are true or not, we do know as a fact, that in cancer we have a most intractable, malignant disease to combat, and which under the very best treatment of surgeon or physician, has an exceedingly unfavorable prognosis.

Whatever ingenious and modern theory of its etiology may be believed or advocated, cancer still remains one of the most dreadful and fatal diseases known to science. No one has any assurance of exemption from it. Neither sex, physical strength, social position, culture, nor refinement, seem to furnish any immunity against it. While this is unfortunately true, and while in surgery or medicine we have no specific for cancer, on the whole the outlook is decidedly encouraging.

We know more about the nature of cancer, macroscopically and microscopically, than we did even five years ago. Some of the greatest minds in our profession confidently predict that in the near future the specific bacillus will be found, and with it the complete antidote. We treat cancer now more successfully every year. Some things we have learned concerning it are of the highest importance, and entirely influence our present treatment.

For instance, it is now almost universally held, by all

leading pathologists, that cancer is primarily a local growth. The day has passed for a physician to declare that a tumor was not a cancer, because it did not recur after removal. This fact is of paramount importance in the successful treatment of cancers, since everything depends upon early and thorough removal of all diseased tissue. This may be said to be a golden rule in their treatment. All failure comes from a violation of this rule.

The general consensus of opinion now is, that all cancers can be cured, if thoroughly removed before the epithelial cells have infiltrated the connective tissue and neighboring glands. For, it is generally conceded that it is the proliferation and infiltration of the epithelial cells which causes cancer to invade other tissues and organs and become disseminated through the system.

This being the case, the only treatment that can offer anything like a cure, is the one which has for its object the early and complete removal, or destruction, of all the morbid epithelia.

Another important fact connected with cancer, and which is also an unanswerable argument for its early and thorough removal, is its manner of growth. Non-malignant new growths, such as lipoma, chondroma, etc., originate from embryonic rudiments, in an indirect manner, as a result of an injury to the part. They are simply tissue tumors, and increase in size by continuous multiplication of cells, derived from the embryonic rudiments, and as the tumor increases in size by centric growth, the tissues of the part in which it is situated are pressed upon, until finally the tissue surrounding the new growth becomes so compressed as to form a more or less distinct capsule, within which capsule all the tumor is contained. Outside of this capsule, there is no infiltration of the tissue or peripheral extension growth. This capsule can be easily recognized and the extent of an incision in a given case definitely

determined, and we can know positively when all the tumor is removed.

A very different condition of affairs obtains, however, in regard to the growth of cancer. It does not spread by centric growth, producing a sharp, easily defined margin, but by peripheral proliferation, and by an infiltration of the tissue, to an extent not recognizable by touch or unaided sight. There is no capsule enclosing all of this growth, and no well-marked limit to the infiltration. The increase of the tumor by continuous growth of the peripheral cells and infiltration of the surrounding tissue, not *en masse* but gradually and without order, in an irregular manner, as regards the line of limitation, produces a condition entirely different from that produced by centric growth, as occurs in the simple tissue tumors.

Fibroma is due to the growth of fibrous cells; the process being almost identical with that which occurs in the healing of a wound. A lipoma is nothing more than a fibroma in some of whose cells are deposited fat globules. The oil in the cell has simply pushed the nucleus to one side. A fibrous cell does not possess the power of infiltration like the epithelial, and is therefore self-limiting, movable, and as a rule benign.

In the one case, the cells grow from the center and bulge out, and are dependent upon some form of external irritation; in the other case, the cells grow on the surfaces and dip into the tissues, caused by some irritation acting within the growth.

In the one case, the pathological process is sharply defined, and its limits restricted by the protective capsule; in the other case, the diseased cells are unconfined and free to wander whither they will.

The therapeutics of this horrible malady is, to say the least, in a very unsettled state, and in every way highly unsatisfactory. A great many remedies have been tried, and

all have proven more or less complete failures. No surgeon would now think of relying on general constitutional remedies except in cases where the knife, or some good equivalent, could not be used.

If some parasite is the origin of cancer, we may hope that in the near future some agent will be discovered, which, administered or applied, in some manner will kill the germ or make the ground unfavorable to its existence. But at present our only reliance is in local treatment—the prompt and complete removal or destruction of all diseased tissue. To accomplish this end, surgical means have been almost exclusively employed. In the removal of ordinary benign tumors surgery certainly offers us the best means and the greatest success. For in simple tissue tumors, the new growth, when favorably situated, can always, with absolute certainty, be removed by excision. But in cancer, where we find no limiting membrane, no sharply defined guide, as to the extent of the infiltration beyond the tumor mass, other local means than the knife may be more properly indicated for its successful removal.

The object of this paper is to endeavor to emphasize this point. I wish to state here that I am no anti-cutter; on the contrary, I am a strong believer in the use of the knife in suitable cases, and frequently employ it. It has the advantage that it can be used without pain, the tumor can be removed quickly, and the wound heals rapidly. Again, there are certain portions of the body in which cancer may occur where the knife seems to afford the greatest hope of success. Such, for instance, as the flexor surface of the forearm, the penis, and the scrotum. Unless seen early, on the forearm and penis, amputation will probably offer the only relief.

A great amount of tissue can be removed from the scrotum without injury to the patient; therefore, the knife has decided advantage over any other form of local treat-

ment for cancer of the scrotum. But in other situations, as on the nose, cheek, or in fact any portion of the face, where the necessary amount of tissue cannot be removed without producing more or less mutilation and deformity, the knife should not be used.

The treatment of cancer by the knife is very far from satisfactory. It is true that if all of the diseased tissue is removed by this means the tumor will not recur; but practically, this seems very difficult to accomplish. It is a fact, that very frequently, there is a recurrence of the disease after a few months, or possibly a year or two. I have seen but few cases of skin cancers removed by the knife which have not recurred inside of two years. It is well known that local recurrences of knife operations nearly always begin as small, hard, and well-defined nodules, on the very edge of the scar, being partly in the normal and partly in the cicatricial tissue. Attention has been drawn to this fact recently by a number of our most eminent surgeons, and they suggest that the operation should be of a more sweeping character.

It is difficult to remove a malignant tumor without the knife cutting into some portion of it; therefore, the blade must necessarily contain some of the epithelial cells, and it is easy to conceive that some of them would be left imbedded in the healthy tissue in spite of careful antiseptic washing, and the wound closed up with all of the original tumor carefully removed, but with the germ of the recurrent disease unintentionally sown in good soil.

On the other hand, if a few of the scattering epithelia happen to be situated outside of the line of incision, there is no inflammatory process to weaken or destroy them. There are a number of authentic cases of cancer being destroyed by the results of inflammation alone.

It is no uncommon practice now to produce inflammatory conditions for this specific purpose. But in this day of

asepsis and antisepsis, the wound heals by first intention, and if a single cancer cell is left, even at the margin of the wound, it is not destroyed, and during the healing process, when an unusual amount of nutrition is furnished to the part, this epithelial cell is placed in a specially favorable condition to grow and increase. These, and other reasons, would seem to indicate that the knife was not always the best means for the removal of malignant growths.

There is no doubt, I think, that the employment of such escharotics as caustic potash, chloride of zinc, and arsenious acid is fully as efficient as the knife in any case, and has decided advantage over it in many cases. I am sure that not a few of you will regard this as rather an extreme statement. I am fully aware of how the profession generally are prejudiced against those ignorant or designing charlatans who advertise themselves as "cancer doctors," "cancer specialists," etc. I fully share in this proper detestation of such quacks and their methods. But very few will dispute the fact that even they do sometimes cure cancer, and that too, in many instances, without any kind of knowledge of the disease treated, or of the therapeutic action of the remedy employed.

Because a certain kind of remedy or treatment is used by blatant quacks, is no argument that there is no good in it. The corner-stone of rational medicine is, take good wherever it is found.

My personal observation in the use of caustics in the treatment of cancer may be of but little service to you. I am no cancer specialist, nor do I advertise to cure cancers. I have not treated many cases, and those such only as come to a physician in general practice. When I have used the knife in their treatment, I have had more recurrences than cures. In the last four years I have treated fourteen cases of skin cancer with caustics, and in not a single case have I seen the slightest indication of recurrence. Five of

the cases are from three to four years old; three of them from two to three years old, and the other six have been treated within the last two years. One of the number died from pneumonia three years after being operated upon, the others are all living and in good health.

Caustics of various kinds have been employed for a long time in the treatment of cancers, both by cancer quacks and the regular medical profession. I am satisfied that their use in this connection has not received a fair and impartial trial at the hands of the latter. The most of them have condemned their use without a trial, or if employed at all, it has been done in a very crude and imperfect manner. To my mind there are several good reasons why the profession generally should give caustics a full, painstaking trial in the treatment of skin cancers.

In the first place, cancer is a most dreadful disease and fearfully fatal, and anything that offers a reasonable hope for cure should be welcomed gladly.

In the second place, and if for no other reason, to take their use out of the hands of ignorant charlatans, and place them in the hands of the regular profession, where they properly belong.

These caustics are quite poisonous, and when employed in a careless or incompetent manner are likely to do great harm. If they have merit, we can use them better than the cancer quacks, and let the credit come where it properly belongs.

In the next place, if the cure of cancer is dependent upon its early removal, the caustic treatment has some advantages over the knife, since a great many timid patients who would shrink in horror from a cutting operation, with a little tact upon the part of the operator will readily consent to the application of a caustic paste. There is no doubt that some caustics have somewhat of an elective ac-

tion, and all of them cause less destruction of tissue and produce less deformity than does the knife.

Again, if the products of inflammation have any influence in modifying or destroying the growth of cancer cells, we have the fullest benefit and advantage of it in the use of caustics. Weak caustics do infinitely more harm than good. By their use only a portion of the tumor mass is destroyed by one application, the inflammation resulting is slight and gradually loses itself in the surrounding tissues. This has the effect of simply stimulating the growth, and hence causing a more rapid proliferation and infiltration of the epithelial cells than existed before the cauterization. But with such caustic agents as caustic potash, chloride of zinc, and arsenious acid, the tissue can be destroyed to a greater or less extent as rapidly as you please.

We have, as the result of the application of any one of these caustics, the complete destruction of the tumor mass, and an intense, widespread inflammation, which extends far beyond the limits where the knife would usually be employed. I am pretty well convinced that from the use of these caustics there is formed in the tissue cauterized a toxalbumen, which is destructive to the cancer cells, or to the organisms, if such exist. It may be the inflammatory process alone which produces the desirable results, but when enlarged lymph glands, at a distance from the cancerous tumor, diminish in size after the caustic has been applied, it is difficult to avoid the conclusion that such an agent must be present and active.

Mrs. M. H., aged fifty-five years, came to me about three and a half years ago with an epithelioma of the right breast, which had been removed eight months previous in rather an imperfect manner, as the axillary glands had not been removed, but which were said not to be enlarged at the time of the original operation. They were now enlarged, however, and I advised a second more thorough removal

with the knife. She firmly declared that she would rather die than undergo a second cutting operation. I then applied Marsden's paste, and left it on for twenty hours, and in seven days the entire tumor sloughed out, and the wound healed in about eighteen days. At the time I dismissed her I could not, by the most careful examination, detect a single enlarged gland in the axilla.

It is now over three years since she received this treatment, and there has not been a sign of recurrence. I have operated upon two primary cancers of the breast since that time with caustic potash, in one of which the glands were slightly enlarged; they entirely disappeared in about three weeks, and in neither case has there been anything but the most favorable results.

In the near future I intend to give to the profession the results of my treatment in the other cases. Each of the escharotics mentioned seems to have special indications peculiar to itself.

For instance, if we desire rapid work, caustic potash is indicated; in extensive work, chloride of zinc has advantage, and for sure, safe work in the majority of cases, arsenious acid is the most desirable caustic agent we can use.

Caustic potash quickly liquefies tissue, and at one sitting a very large tumor can be destroyed. Its action, however, extends further than the part to which it is directly applied, and its use is followed by marked inflammatory changes in the surrounding parts, which may or may not lead to the destruction of the tissue. If it should be destroyed, then there is a wound as large as that usually made by the knife. But with care in the application of this caustic, the destruction of the surrounding tissue, from the intensity of the inflammation, may be entirely avoided, and only the tumor properly destroyed.

The amount of inflammation following the use of caustic

potash is said to be a valuable guide as to the extent and amount of the epithelial infiltration. This seems plausible, since the inflammation must depend upon the vulnerability of the tissue, and the vulnerability upon the condition of nutrition of the part, and this condition is directly the result of circulatory disturbance, caused by the extent of the infiltration, by the epithelial cells. Caustic potash is a valuable agent where you wish positive results in one sitting. As a rule, it leaves more cicatricial tissue formation than either chloride of zinc or arsenious acid. Its use is contradicted near the eye or upon the nose. Its application is attended with much pain, but a general or local anesthetic can be employed, and in this respect it has no disadvantages, as compared with the knife.

Chloride of zinc as a caustic can be used in stick form, in solution, or in a paste. It causes more pain than either caustic potash or arsenious acid. Chloride is not thought to have any decided elective action for pathological tissue, but destroys both normal and pathological tissue, with an almost equal degree of rapidity. On account of its slower deliquescence and slower action, it has some advantages over caustic potash. In epithelioma of the roof of the mouth, in that of the lip, or when situated near the outer or inner canthus of the eye, or on the lid, a pointed stick of chloride of zinc can be used more effectively, and with greater precision and safety, than any other caustic.

Caustic potash or any form of caustic paste is apt to cause too much inflammation when used near the eye, and is not enough under control of the operator. A 50 per cent. solution of the chloride of zinc can be injected into any desired portion of a cancerous growth; or a paste can be employed for its destruction.

Bougard's paste is one of the best means we possess in the treatment of small cutaneous cancers. It is prepared as follows:

℞ Wheat flour,
Starch.. āā ℥i.
Arsenious acid.......................................grs. viii.
Hydrarg sulph. rub.,
Ammon. mur ....āā grs. 40.
Hydrarg. bichlor.....................................grs. iv.
Zinc chlorid (cryst.)................................℥i.
Aqua fervid, about...................................℥i.
M.

The paste is spread thickly on a piece of muslin, and left upon the part for twenty-four hours. If the first application is not positively successful, the second application should be made within a few days.

This paste can be applied to a large surface at one time, as there is no danger of poisoning. If the surface of the tumor is hard, or the epidermis unbroken, it is better before applying this, or any other form of paste, to apply lightly a stick of caustic potash. The action of the paste is then more prompt and sure. After the tumor has sloughed out, which can occur anywhere from three to ten days, the wound may be treated with any simple protective salve or antiseptic dressing.

The caustic of all others that has the widest range of usefulness, and from which we derive the most satisfactory results in the treatment of cutaneous cancers, is arsenious acid. It is usually employed for this purpose in the form of a paste known as Marsden's paste. This paste usually consists of equal parts, by weight, of arsenious acid and powdered acacia, rubbed well together, and enough water added to make a paste about the consistency of rich cream. This should be spread upon muslin or rubber plaster in a layer of about one quarter of an inch thick, and extending beyond the edge of the visible tumor in every direction, and firmly applied and kept in position for from fourteen to twenty hours.

From four to six grains of cocaine should be incorporated with each drachm of this paste. It is not so good as chlo-

ride of zinc for cancer of the lip, or of mucous membranes, on account of danger of poisoning by absorption. The fact that the paste can be applied to the healthy skin without producing but very little destructive results shows that it has an elective action for diseased tissue. It acts quicker and with less pain than the chloride of zinc. To my mind Marsden's paste is preferable to all other forms of caustics, and may be regarded as almost a specific for skin cancers if seen early. The wound left should be treated as in the case of the chloride of zinc. If the tumor is large or the wound does not heal kindly, in a reasonable length of time, a second, or even third, application of the paste should be made.

To apply these caustics successfully demands a certain amount of experience, which any one can acquire after applying them two or three times. The greatest cause of failure in their use is the neglect to treat the case energetically until thoroughly satisfied that all diseased tissue has been destroyed.

DISCUSSION ON DR. MORGAN'S PAPER.

Dr. L. G. Hardman, Harmony Grove: I have been very much interested in Dr. Morgan's paper, and I have thought for some time about caustic applications in the treatment of cancers of the skin. It has been my experience in removing cancers with the knife the great majority of them have returned. We find this to be the case very frequently, that patients come to us for treatment who object to the use of the knife, go away and are treated by so-called cancer specialists with success. I have been impressed with the results of these men in treating epithelioma or cancers of the skin, and it has occurred to me for some time that caustic applications in cancers of that kind are certainly preferable, for the reason that in the use of the knife, after the cancer is removed, as a rule, we have

enough flap left so as to get immediate union. In that way, if there are any cancerous cells, or whatever the cause of the cancer may be, whether a cell or a germ, it is left to take on some action, since with the use of caustic applications, either from the inflammatory action set up by them, or the direct effect of the caustic itself, it seems the cancerous process has been changed into a healthy action, and instead of the disease continuing we have a healthy condition brought about, and when the wound has healed we have normal tissue outside of what cicatricial tissue has been produced by the escharotic. For that reason, I have been very much interested in the doctor's paper, and I think the profession as a rule have done themselves injury by discarding escharotics in the treatment of malignant diseases of this character. I heartily indorse his views, and wish to compliment him on the thoroughness with which he went into the description of the different kinds of tumors, namely: malignant and non-malignant tumors.

Dr. V. D. Lockhart, Maysville: I am especially interested in the subject under discussion. I have seen a few cases of cancer. A few years ago there was an irregular practitioner in our section of the country who professed to cure cancer, and he told me how he made up his paste, which consisted of rye-flour and chloride of zinc in the proportion of two parts of the flour to one of zinc. I had an opportunity of applying this paste in two cases. It produced an active inflammation, but succeeded in removing the growth in both cases. It is five years since the first case was treated, and the other was treated about twelve months ago. A clean granulating surface was left which healed kindly in both instances, with no return of the disease. I have not tried the Marsden paste, but expect to give it a trial as soon as an opportunity presents.

Dr. Bernard Wolff, Atlanta: I wish to express my entire agreement with what Dr. Morgan has said with refer-

ence to integumentary cancer. My own experience has been chiefly limited to the treatment of superficial epitheliomata of the skin. I think the ideal treatment for incipient epithelioma of the skin is Marsden's paste. It will remove the cancerous nodule in its entirety. The malignant new growth is converted into an open ulcer which readily heals. In incipient epitheliomata caustics, especially Marsden's paste, are vastly to be preferred to the knife. The usual formula for the paste is a drachm of arsenious acid, 20 grains of cocaine, and 2 drachms of powdered gum arabic. The cocaine is quite sufficient to mitigate pain. My plan is to freshen up the epithelioma by means of the curette until a raw surface is secured, then smear the paste on a piece of lint of appropriate size, and apply it to the freshened surface; allow it to stay in contact twenty-four hours, then remove it and curette the slough that has resulted from the coagulating influence of the paste. Then reapply it. After two applications the lesion is practically removed, and then the part is treated in the ordinary way. Of the various pastes I have used, and I have had quite a large experience in the treatment of these cases, I am decidedly partial to Marsden's paste in this class of cases, and I think my experience agrees with that of Dr. Morgan.

Dr. J. H. Shorter, Macon: The subject which Dr. Morgan has dwelt upon in his paper is an interesting one. It shows us that there is a difference in cases in the chance of return of a malignant growth, according to the locality of the body in which it is situated. I was struck with that fact some years ago when I published a translation of a report of a series of cases in which the malignant disease involved the external portion of the eyeball, generally at the sclero-corneal junction. There were about thirty cases altogether, and I was impressed with the extreme curability of sarcoma in this region. Out of the whole number only one

terminated in total loss of the eyeball, but did not cause death, and some of the cases were followed for ten years or more after treatment without manifesting a return of the disease. On the contrary, diseases of the orbit back of the eyeball, or intraocular malignant troubles, are almost certain to recur.

Dr. M. B. Hutchins, Atlanta:

I think Dr. Morgan has obtained some very excellent results with his caustic applications, and personally I wish to thank him for the paper he has given us regarding the pathology and treatment. I believe Dr. A. R. Robinson, of New York, was the first physician in this country to work out the subject of pastes and caustics and their effects upon cancerous disease of the skin. He has written a great deal upon this subject, and claims to have secured such results, as Marsden did before him, with the paste and caustics, as could not be obtained with the knife. At one time I was tempted to become a complete convert to Robinson's method of treatment, but from increased experience I have come to believe that it will not do to consider that all of these cases of superficial epithelioma must be treated by strong caustics, or any special kind of strong caustic, which is a very painful method of treatment, in order to destroy the growths.

There is one feature in connection with the treatment of epithelioma which is of paramount importance, and that is to remove all of the diseased tissue. If the physicians, who have had failures with the knife in the treatment of these cases, had continued to use the knife and followed it out more thoroughly by going just a little farther, or beyond the diseased area, then filling the wound either by skin grafts, skin sliding, or a plastic operation, I believe they would get as good effects from the use of the knife as from caustics, in many cases.

As regards the action of the inflammation in destroying

the cancer cells, as is claimed by some, and, understand, I use caustics more than I do the knife in these cases—if the inflammation does destroy and cut off the little infiltrating cells and kills them, why have the experiments of Coley with the erysipelatous streptococci and the bacillus prodigious so utterly failed? They must produce some inflammation. In ordinary cases of epithelioma of the skin I prefer largely the use (under proper cocaine anesthesia) the solid stick of caustic potash, and have obtained good results with it. I have also obtained good results with the Paquelin cautery, as well as with the use of Marsden's paste, and yet I have seen every one of the methods fail, bringing us back to the point that I mentioned a short time ago, namely, of not getting, or removing, all of the disease. It seems to me that the question of inflammation does not explain the whole thing. I think it is just the important point of going far enough with the caustic, cautery, or any of the applications which are used. Caustics are not wholly under your control, and you get a certain amount of destruction that you do not aim for.

One serious objection to Marsden's paste is the length of time it must be left on the surface, and the pain which it produces. You may, of course, have cocaine in your paste, but after a while the cocaine will lose its effect, and the patient then suffers. In the case of an old woman, I gave her a hypodermic injection of morphine, one-half grain, and to all intents and purposes she was dead for the next twelve hours, and I could continue the use of Marsden's paste on her nose for that length of time without causing pain. I do not wish to be understood as condemning pastes and plasters altogether, but I do not think we should consider them the only method of treatment in these cases. If we have cells which have become separated from the original epithelioma and have passed into the lymph spaces and the spaces behind are practically closed up, the caustic does

not reach these cells which seep along through the skin. In such cases we get a recurrence of the growth outside of the margin of the original treatment. In cancer of the breast, where we have involvement of the glands, we cannot expect to reach by caustics those cancer cells which have passed on to the lymphatic channels.

Dr. Morgan (closing the discussion): I have nothing to say in closing. The discussion has been mainly an agreement with what I said in my paper, and I have already taken up so much of your valuable time that I do not feel warranted in saying anything further. I thank you for the kind reception granted my paper.

PUERPERAL ECLAMPSIA, WITH REPORT OF CASES.

By S. RUMBLE, M.D., Goggansville, Ga.

In presenting this paper, I do not propose to discuss the many and varied theories which have hitherto been advanced as to the etiology of puerperal eclampsia, but merely to give some conclusions formed from my own clinical experience.

Theories and preconceived ideas when put to practical clinical test are often exploded and found to be utterly worthless. Perhaps more theories have been advanced as to the cause of puerperal eclampsia than any other known disease, and yet from the present status of our knowledge we can attribute puerperal eclampsia to no one specific cause.

Congestion of the cerebro-spinal axis was long held to be the causative factor in producing the eclamptic seizure, and hence we find our predecessors were warm in the advocacy of blood-letting and other depleting remedies.

Whatever may be the cause of puerperal eclampsia, be it uremia, cholemia, hydremia or a toxemia of any kind, or a reflex irritation, it is obvious that the cause in producing the convulsive movements acts directly on or through the medium of the motor centers of the spinal cord.

In my short career as a physician I have seen only six cases of puerperal eclampsia, no one of which I could attribute to one cause alone.

The nervous centers in the pregnant state are supposed to be, and doubtless are, supercharged with nerve force. I

have seen one case of puerperal eclampsia which I could, barring a slight cholemia, attribute to this theory alone. In reporting the following six cases of puerperal eclampsia, I will state that none of them had any prophylactic treatment. I was called to every case except one after the convulsions developed.

Case 1.—Lizzie S., colored, pluripara, aged thirty-five. Was called to this case December 24, 1889, at 2 o'clock p.m. She had reached the eighth month of pregnancy and was seized that a.m. at 9 o'clock with a severe headache and pain in the epigastrium, which was immediately followed with a convulsion.

I found her in a comatose condition, the fourth convulsion having subsided just a few moments before I arrived. On examination found no dilatation, but cervix soft and yielding. I at once introduced my index-finger through the os and began to dilate by sweeping the whole length of finger around between the amniotic sac and lower segment of the uterus.

After dilating the os to the size of a silver dollar, I gave a hypodermic of fifteen drops Norwood's Tr. Veratrum, which was repeated every thirty minutes, until one drachm had been given. I also gave thirty grains chloral per rectum until 2 drachms had been given.

The convulsions came at intervals of about one hour, and at 6 o'clock, during the clonic stage of a very severe one, there was an ominous gush, which I thought was the rupture of the amniotic sac, but, to my surprise, on examination, I found the child and placenta lying between the woman's thighs. Uterus well and firmly contracted.

Child was still born and failed to resuscitate it. After having patient well cleansed, soiled clothing and bedding removed, I left the following prescription:

℞ Chloral Hyd.
Pot. Bro. ..... āā ʒ ij.
Aqua. ..... ʒ ij.
M. Sig.—Two teaspoonfuls to be given every two hours when awake.

I left patient in a comatose condition with a temperature 102.5 degrees at 7 o'clock p.m. I was very much pleased at having the uterus emptied, but was much chagrined at not being able to control the convulsions with veratrum and chloral.

December 25.—Saw patient at 9 o'clock a.m.; she was still comatose, with pulse 120, temperature 103. She had five convulsions since the previous evening, making a total of 13 convulsions. I at once gave 1-2 grain morphia with 1-100 grain atropine hypodermically and gave same directions as to chloral and bromide as on previous evening, and emptied bladder with catheter. Saw patient again that p.m. at 6 o'clock. Pulse 100, temperature 102. She had aroused from the coma and had taken medicine and some nourishment. I ordered the chloral and bromide continued through the night and Epsom salts to be given the following a.m. in dessertspoonful doses every two hours until bowels were freely purged.

December 26th.—Saw patient at 4 o'clock p.m. Pulse 90, temperature 100. Bowels and kidneys had acted freely; she steadily improved after this and made a complete recovery. Her urine was loaded with albumen when I first saw her, which completely disappeared on eighth day after delivery.

She became pregnant and was confined again in about twelve months and died with an attack of puerperal eclampsia. The physician, Dr. R. E. Brown, who attended her, informed me that he used veratrum in heroic doses, rapid dilation and delivery with forceps.

Case 2.—Amanda O., colored, pluripara, aged 30, weight 160. Was called to see her at 8 o'clock p.m., December

24, 1889. She had completed the ninth month of gestation and was seized with convulsions that p.m. at 3 o'clock, she having had the fifth convulsion when I reached her. I found her comatose, os slightly dilated, cranial presentation. I bled her at once, taking twenty ounces of blood from arm, also gave her thirty grains of chloral per rectum every hour until 150 grains had been given, without any perceptible effect on the convulsions, which continued to come at intervals of one to one and a half hours. I succeeded in delivering her of a small, weak, but living child at 2 o'clock the next morning. I left patient at 4 o'clock comatose; pulse 100, temperature 102. Ordered bromide to be given in teaspoonful doses every two hours when awake as soon as the coma subsided. Also ordered husband to call me if the convulsions returned, which he did at 8 o'clock, stating that she had had two since I left her. I returned and gave a hypodermic of 1-4 grain morphia with 1-120 grains atropia. Ordered bromidia to be given as soon as she could swallow.

Saw patient again that p.m. at 5 o'clock. She was conscious and could take medicine and nourishment. No convulsions since morphia had been given and had voided urine voluntarily. I ordered bromidia to be given every three hours when awake and Epsom salts the next morning in dessertspoonful doses every two hours until bowels were purged thoroughly.

December 26th.—Saw patient at 5 o'clock p.m. Temperature 99, pulse 80. She made a good recovery and was up in fifteen days. Urine contained a small amount of albumin, which totally disappeared on fourth day after delivery. Child remained weak and illy nourished and died at ten months.

Case 3.—Lizzie F., pluripara, aged twenty-five. I was called to this case at 5 o'clock p.m., July 4, 1892. She was attended by midwife three days previously, and after a normal and easy labor delivered of a well-developed,

healthy male child. I found her in a semi-comatose condition, pulse 130, temperature 103. Dr. A. W. Purifoy was visiting relatives in the community and was near by when the woman was seized with a convulsion. He was called in and had given her a hypodermic of 1-4 grain morphia at 4 o'clock, immediately after the eclamptic seizure passed.

On inquiry I found no urine had been voided in thirty-six hours, lochia arrested. I introduced catheter with some difficulty, there being a strong contraction of the sphincter muscle of the bladder, and relieved her of two quarts of urine, also washed out uterus, which was distended with putrescent blood-clots and fragments of placenta. I then gave her one grain each of calomel and bicarbonate sodium every hour until five doses had been given, to be followed in four hours after last dose with Epsom salts. I also gave three minims tincture aconite root with camphor water every two hours. She was given a vaginal douche of hot carbonized water every six hours.

July 6th.—Temperature 100 degrees, pulse 90. Bowels and kidneys had acted freely, no convulsions since morphia had been given. Her condition continued to improve and she was up in ten days after having convulsions. I examined urine for albumin, but found none.

Case 4.—Mrs. M., white, primipara, was confined at term February 19, 1893. I was called to see her at 7 o'clock a.m., and after a tedious but otherwise normal labor, delivered her of a strong, healthy female child weighing eleven pounds at 4 o'clock p. m.

I remained one hour after delivering placenta. As I was preparing to leave, the patient suddenly began complaining of an intense headache, and almost instantly was seized with the most severe convulsion I have ever seen; so violent were the spasmodic movements that the floor of the

room was shaken and furniture jarred. As soon as the convulsive movements subsided, I gave her a hypodermic of 1-4 grain of morphia and 1-20 grain of atropia; also gave chloroform by inhalation for fifteen minutes. She remained quiet, the stentorious breathing ceasing in less than an hour, and slept until ten o'clock, when she awoke perfectly rational, but complaining some of headache. Fearing another convulsion I repeated the morphia and atropia and gave chloroform to partial anesthesia. She slept quietly until 5 o'clock next morning. She was then ordered to have bromidia in teaspoonful doses every three hours when awake. Her temperature immediately after the convulsion was 102 degrees.

February 20.—Saw patient at 8 o'clock a.m.; temperature was 102.5 degrees. No convulsion since morphia had been given. She was given bromidia every three hours when awake and ordered to be given Epsom salts in dessertspoonful doses every two hours the following morning until bowels were freely purged.

February 21.—Saw patient at 4 o'clock p.m. Temperature had subsided to 100 and bowels had acted freely and kidneys were performing their function in a normal way. She improved rapidly after this and was up in fifteen days after delivery. I did not test urine for albumin until after convulsions, when I found it present in a large quantity. There was only a slight edema of the lower extremities, none at all of the face and upper extremities. Albumin disappeared from urine in five days after birth of child.

Case 5.—Mrs. D., white, pluripara, aged thirty-five, was confined at term April 3, 1894. She was attended by midwife, and after a short normal labor, delivered of a strong, healthy child at 6 o'clock a.m. She was seized

with a convulsion at 7 o'clock. I was sent for and arrived at 10 o'clock. As I entered the room she was seized with the third convulsion. As soon as the spasmodic movements subsided, I gave a hypodermic of 1-2 grain morphia with 1-100 grain atropia. Also gave chloroform for fifteen minutes. She slept quietly until one o'clock when she awoke perfectly conscious.

She was then ordered bromidia every two hours when awake in teaspoonful doses, but from some cause it was not given as I directed, and at 7 o'clock she had a slight convulsion, but did not lose consciousness. Another hypodermic of 1-4 grain morphia with 1-120 grain atropia was given and chloroform to anesthesia.

She slept quietly through the entire night and awoke the next morning with only a slight elevation of temperature.

She was ordered bromidia every three hours through the day when awake in teaspoonful doses, and Epsom salts in dessertspoonful doses every two hours until bowels were thoroughly purged.

I found albumen in urine on my first visit, which totally disappeared on fourth day after confinement. She made a quick and perfect recovery.

Case 6.—Mrs. F., white, pluripara, aged thirty-four, weight 150 pounds, on December 11, 1896, which was about her expected time of confinement, at 1 o'clock a.m. began to complain of severe headache and immediately afterwards was seized with a convulsion. I was called at 8 o'clock, she having had the fourth convulsion only a few moments before I arrived. She was comatose and the stertorous breathing could be heard fifty yards from the house. She was at once given a hypodermic of 1-2 grain morphia, with 1-100 atropia and chloroform by inhalation for ten or fifteen minutes. On examination found os slightly dilated, with the head of the child presenting in

first position. She slept quietly until 11 o'clock, when she awoke in a semi-rational condition, but was able to void her urine voluntarily. Labor was progressing nicely, the first stage being completed at 12 o'clock. I succeeded in delivering her of a living child at 3 o'clock p.m.

Bromidia was given at intervals of three hours when awake for twenty-four hours after delivery and on second day bowels were well purged with Epsom salts. She made a good recovery. There was no albumin or the least elevation of temperature in this case. The child lived and is growing nicely.

In the above report of cases it will be noticed that no positively depleting remedies were used except venesection in case 2. Morphia was used in first two cases only after failing to get any effect from veratrum hypodermically and chloral by the rectum. The prompt and positive effect of morphia in arresting and controlling the convulsions in every case in remarkable.

Now the conclusions which I have arrived from the teachings of clinical facts in the above cases are:

1st.—That puerperal eclampsia is a disease, the etiology of which is yet *sub judice*.

2d.—That puerperal eclampsia often develops after the uterus is emptied of the product of conception.

3d.—That morphia is the most positive and prompt remedy which can be used to arrest the eclamptic seizure; it obtunds nervous sensibility and arrests muscular spasm. It counteracts irritation of the nerve centers, whether the irritation be due to a toxemia or is of a reflex character.

4th.—That veratrum is not only an unreliable remedy, but one fraught with danger in this disease.

5th.—That chloroform and chloral hydrate are excellent adjuvants to morphia in arresting the spasms and maintaining the equilibrium of the nervous centers.

6th.—That cerebral congestion is a result and not the

cause of the convulsion. Hence, I do not favor venesection.

7th.—That we can do a great deal in lessening the frequency, if not the ratio, of mortality in this disease, by timely and proper prophylactic treatment.

DISCUSSION ON DR. RUMBLE'S PAPER.

Dr. J. W. Duncan, Atlanta: I consider the paper a very interesting one. The doctor extols morphine for its remedial effect in puerperal eclampsia. Several years ago I tried it more than any other one remedy. Some of the cases would yield to morphine and chloroform. I do not condemn the use of it, but in several cases just as soon as the patients came from under the influence of it they would have convulsions. Another point about it is this, that it does not help to eliminate the poison, or whatever the cause may be. The doctor says he tried veratrum in his first case, and having failed to get the benefit that he expected from it, he did not use it in the other cases. Veratrum is a valuable remedy in the treatment of puerperal eclampsia, and I have had better results in connection with its use than any other drug.

About three years ago, I was called one morning to see a lady who commenced to have convulsions about eleven o'clock the preceding night. I found an eclectic physician in attendance, trying to control the convulsions with passiflora. But the convulsions occurred more frequently and were more severe. The woman was about eight months advanced in pregnancy. I gave her ten drops of Norwood's tincture of veratrum hypodermically, 1-8 grain of pilocarpine, drew off the urine, and left the patient to go to my office, telling them that I would return in a short time. I got my friend Dr. Kime to go with me, but before I left I gave the patient a second injection of ten drops of Norwood's tincture, and seventy minutes later

she had ten drops more, making in all thirty drops in two hours and ten minutes. She was perspiring quite freely, was entirely unconscious. We proceeded to dilate and deliver, and she had no more convulsions and her recovery was uneventful. I have seen other cases treated with the hypodermic use of Norwood's tincture of veratrum that have proved equally successful. In nearly all the cases that have come under my observation, albumin has been present in the urine. I have not had a case where I have examined the urine in which albumin was not found. In the case reported there was a greater percentage of albumin than in any of the cases I have ever seen. After applying heat and acetic acid the test tube could be inverted and the contents would not run out, but was a semi-solid mass.

Dr. T. M. Greenwood, Mineral Bluff: I do not think I have examined the urine in a case of puerperal eclampsia without finding albumin present. As to the treatment I invariably use veratrum and morphine as soon as the trouble is suspected. The treatment that was given out, the first I ever heard, was known as Grigg's treatment, and while it will not do to rely on any one treatment in these cases, I have always got some benefit from that. I always make it a rule when I am called on to deliver a woman to examine the urine and try if albumin is found to clear it up, and I think if we would do all this and get the kidneys in a good active condition, we would have fewer cases of puerperal convulsions. It has been my observation also that when the uterus is clear we seldom have any convulsions. I saw a case not very long ago where the woman was delivered about 2 o'clock in the night, and about 8 o'clock the next morning she had a convulsion, shortly after which I was called to see her in consultation, and on examination found some of the membranes and some clots in the uterus. I do not know whether that had anything to do with the causation of the convulsions or not. I

also found albumin in the urine. I do not think that we make sufficient preparation of our patient in these cases. At a previous meeting of this Association I reported 590 cases of labor, and now I could report 735 cases, and in all of them I can say that I have never seen but one well marked case of puerperal eclampsia. I have seen five or six cases that have had slight attacks. Careful attention had been given to the urine in most cases.

I have listened to Dr. Rumble's paper with a great deal of interest, and wish to congratulate him on the success that he has had. But feel quite sure that if the doctor sees his patients early enough to test the urine for albumin, when it is suspected, or what is better, test all and make an effort to clear it up, he will not have so many cases in future. My rule is, where albumin is found to give chloroform in seven to ten drop doses three or four times daily and rarely have to resort to any other means, but should it become necessary would give tincture digitalis and acetate of potash combined.

Dr. J. D. Chason, Iron City: I have listened with a good deal of interest to the doctor's paper in reference to puerperal eclampsia. My observation is that puerperal eclampsia is produced by poison in the system. If the patient appears to be in fairly good health, in almost all cases there will be some slight swelling of the lower limbs, and in all of the cases I have had the opportunity of examining there has been albumin in the urine, and as one of the gentlemen remarked (Dr. Greenwood), very often when the uterus is emptied the convulsions cease. In many instances I do not believe that the fetus is the source of the irritation, but there is a temporary depletion by the letting off of the liquor amnii and other fluids sufficient to control the convulsions until nature comes in. I do not believe morphine is a specific for puerperal eclampsia. I be-

lieve it relieves the symptoms for the time being until other measures are brought to bear, such as depletion. When the skin is acted upon, and when I get the patient's bowels moving freely, as well as all of the emunctories acting freely, I feel safe about my patient.

In reference to puerperal eclampsia not returning after the birth of the child, that has not been my experience. I find, on the contrary, that puerperal eclampsia comes on after the birth of the child. Your remedies, such as veratrum, come in here because of their action upon the skin. Jaborandi is also a splendid remedy. I have given veratrum viride in large quantities, ten minims at a dose, repeating every forty minutes, hypodermically, until forty minims are given, and it has given beneficial effects.

Dr. R. R. Kime, Atlanta: This is a very interesting subject, and one in which, as general practitioners, we are all interested. The question arises as to what is the cause of the puerperal convulsion. It has been stated that we do not at present know the specific cause of the convulsion, from the fact that in all probability we have more than one cause to deal with. It is probably a toxemia that causes the puerperal convulsions. Whether that toxemia be due to inactivity of the kidneys; whether it be due to the development of certain conditions in the blood, or whether it be due in a measure to the life of the fetus and the material thrown off from the fetus itself, are questions open to discussion.

There is one point that has not been mentioned, and that is where the fetus has died *in utero* before labor has developed, in a great many cases the puerperal convulsions will cease, which in a measure indicates that the child itself possibly produces a poison that has a tendency to bring about the puerperal convulsions. The question as to whether or not the convulsion ceases after the delivery of the child will depend upon the condition of the patient

Of course, if we have a toxemia present, the mere emptying of the uterus itself will not relieve the toxemia; but you must move the bowels, get the kidneys and the skin acting freely, unload the system, and when you have done that, together with emptying of the uterus, the majority of cases will get along. But the mere emptying of the uterus itself will not always relieve these cases, and I am of the opinion that many cases of convulsions are brought on by toxic material retained in the alimentary canal, due to undigested and fermented food, developed ptomaines in the alimentary canal, and the system being in that condition favorable to convulsions, this exciting cause will bring about puerperal convulsions.

Another point that has not been mentioned is whether or not we should empty the uterus in cases of convulsion. Charpentier, of Paris, admits that it is better where labor is in progress, to empty the uterus in cases of convulsions. That, where labor is not progressing, it is not good policy to induce labor. I believe he claims that in a certain class of cases where labor comes on and terminates spontaneously in this condition, there is about eighteen per cent. of deaths; where labor is produced artificially the percentage is thirty, and where accouchement force is induced the percentage of deaths is forty. These are statistics that we must consider inasmuch as they come from a practical source. In a case where labor has already commenced and the patient has convulsions, then it is good policy, and it is my policy, to empty the uterus as soon as possible.

The question then arises as to the treatment of the convulsions. The writer spoke of no albumin being found in the urine in some of his cases. Of course we undoubtedly have cases of convulsions in which there is no albumin present in the urine. We have cases in which the kidney itself is not particularly diseased, and again we have them where there is a structural lesion of the kidney. But my

experience has been that nearly all cases of puerperal eclampsia have more or less albumin in the urine, and many cases have a structural lesion of the kidney. The question comes up, what are the results of morphine in those cases in which we have a structural lesion of the kidney, and what is the object of treatment in your cases? Is it to empty the uterus and eliminate the poison, or simply to obtund the sensibilities in such a way that they will not respond to the stimulus of the poison? We all know that morphia obtunds nervous sensibility; that these patients will not respond to the poison, and that it has in no way a process of elimination whatever about it, and that it simply controls by bringing down and controlling nerve sensibility. On the other hand (and I speak from considerable practical experience), veratrum will fulfill the indications better than any remedy we have in the whole materia medica; not that it is a specific, but as a rule it has a wider range of usefulness. It brings down the pulse rate and relaxes the system. It not only does that, but makes the patient perspire. It stimulates glandular activity, which has a tendency to eliminate the poison from the system. If labor is in progress, and the bowels and skin are acting freely and the uterus emptied, the majority of cases will get well.

Another remedy not mentioned by any of the speakers is apomorphia. It is certainly as good as any other remedy we have found for the control of puerperal convulsions. I would not say blood-letting is not indicated, because there are cases in which it is beneficial, particularly in stout and hearty persons. Where you abstract a lot of blood you have saline infusion to take the place of the amount of blood that is drawn off.

Dr. Henry R. Slack, LaGrange: There is one other remedy that has not been mentioned and which has been used by my preceptor, Dr. J. A. Baugh, with advantage

and benefit in puerperal eclampsia. It is tincture of stramonium. He used it successfully in ten or twelve cases. It has been my good fortune never to have had a case of puerperal eclampsia.

Dr. Rumble (closing the discussion): I am glad that my paper has brought out so much discussion. I have no pet theory to advocate in the use of morphia. I like it, and get good results from it. I have used veratrum and failed. I have employed it in heroic doses, as much as fifteen drops every thirty minutes for four hours.

Dr. Kime: Do you give it hypodermically?

Dr. Rumble: Yes. From our knowledge of the physiological action of veratrum, I do not think it obtunds nervous sensibility, nor will it arrest the convulsions unless we give it in toxic doses. To give veratrum in large doses in this disease, with the expectation of arresting and controlling the convulsions, is dangerous. The great danger to life in puerperal eclampsia is due largely to the convulsions *per se* and not to any existing toxemia. Taking it for granted that the eclampsia is a symptom of a toxemia, I think morphia, by arresting the spasm, indirectly aids in the elimination of the poison. If you have a nephritis as a complication, you can arrest the irritation and consequent spasm, from the administration of morphia, and in such cases diuretics and diaphoretics will act quicker and better. I think a great deal of chloral, but the great trouble in the use of chloral in cases of puerperal eclampsia is that you nearly always find the patient in a comatose condition, and it has to be given per rectum, and the rectum is slow in absorbing it.

I think a great deal of chloroform and give it by inhalation immediately after the hypodermic of morphia is given. None of the cases I reported had any prophylactic treatment. They were not my patients except one, and I would not have seen any one of them probably were it not for the occurrence of the convulsions.

TWO CASES OF MALIGNANT TUMOR AFFECTING THE BREAST AND THEIR TREATMENT; WITH SOME REMARKS UPON MALIGNANT GROWTHS IN GENERAL.

By M. B. HUTCHINS, M.D.,

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Although a great deal is being written about malignant disease of the mammary gland and its treatment, I do not remember any paper or discussion in the Georgia Medical Association upon this subject.

I report these cases not as anything new in pathology or brilliant in treatment, but with the hope of bringing out some general discussion among the members, many of whom are doing excellent work in this branch of surgery.

The operations and after-treatment were carried out, so far as practicable, as directed by Senn in his latest work on tumors. In preparing for any operation I have made it a rule to make works on anatomy my first reference, thoroughly familiarizing myself with the minutest details of the anatomy of the parts, thus avoiding the danger of having forgotten some essential point in the structures to be operated upon.

The anatomy is the first requisite; the technique can be obtained from the writings of those of more experience in a particular field, while the special details of one's own cases can be worked out on general principles.

Ideal cases, ideal patients, and ideal results do not always

harmoniously come together. The duration and location of the disease, the circumstances and future of the patient, all combine to prevent our doing as we wish, and may even render impossible the carrying out of the best form of treatment. This accounts for many operations being done in a manner different from the classic method. In my first case I hesitated to perform an operation which would prevent the patient doing the manual labor which was necessary to her existence, reserving the destruction of muscles to such time as it was no longer avoidable, should that time come.

Case 1.—Mrs. A. G., colored, aged thirty-eight, occupation housework and washing. Carcinoma, "scirrhous," of the right mammary gland.

She first noticed a "small lump" in the right breast, just above and to the right of the nipple. She stated that her husband had struck her there at different times. She has had one child. No abscess of the breast. Examination showed a hard, rather well-defined tumor, the size of a small orange, in the middle and upper part of the gland. The upper part of the nipple was slightly retracted. Occasional stinging sensations were experienced. I could feel no enlargement of the glands, either at the lower border of the muscle or in the axilla. The patient weighed 175 pounds and was in robust health. She had quite a mustache and chin beard.

Drs. L. P. Stephens and J. L. Campbell assisted at the operation. Every antiseptic precaution was employed. Elliptic incisions were made well away from the perceptible borders of the tumor, in the healthy skin, from the narrow part of the pectoralis major to the sternum and down to the pectoral sheath.

The sheath of the muscle and the mammary gland were removed by a clean dissection, no tearing, leaving a clear wound with only the muscle fibers as its floor. There was

no perceptible gland at the lower edge of the muscle, nor could any be felt in the axilla. The excision was done in less than ten minutes.

There was remarkably little hemorrhage. Redundant fat under the edges of the incisions was trimmed away with scissors, then the flaps were made with the knife. An inch-incision was made in the lowest part of the gland cavity for drainage. It was necessary to ligate but one artery in the whole wound—hot water and torsion controlling the rest of the bleeding. The wound was brought together with four deep tension sutures of silkworm gut, about an inch apart. Then a continued suture of catgut was made from the outer end to near the inner, where a small opening was left for drainage with ten per cent. iodoform gauze. The line of suture was covered with iodoform one part, acid boric five parts, then many layers of ten per cent. iodoform gauze, salicylated cotton, and three wide bandages were applied; the arm being included finally, and additional support given the wrist with a towel.

Two days later the gauze drain below was removed and the incision closed with one suture. The outer dressings being stained, they were replaced with new ones. Five days after the operation all dressings were removed under strict antisepsis. The surface was perfectly clean, and the wound seemed to have healed *per primam*, except at the outer end and at the internal drainage opening. The gauze was removed from the latter, being followed by about half an ounce of bloody fluid. After applying pressure to remove any remaining fluid, another piece of gauze was inserted. The lower drainage incision was granulating nicely, with a little oozing of bloody serum visible. Dressings were made as at the time of operation.

Eight days after the operation the inner drainage and the four tension sutures were removed. There was perfect primary union save at the two extremities. The suture

was removed from the lower drain incision also. This wound was clean and healing. The surface was covered with a lighter dressing and the arm left free. Two days later only the lower drain remained unhealed. Gauze was applied there and cotton to the rest, with oblique adhesive strips.

Healing was complete in the lower drain eighteen days after the operation. There was never any pus. At the inner end of the main incision there was a lump of compressed fat.

The patient was seen nearly four months after the operation, for the last time. The inner half of the united wound showed perfect union, the outer half a line of cicatrix. A small cicatrix marked the site of the lower drain. There was absolutely no sign of recurrence, nor of glanduiar involvement. The patient left the city and I have not seen her again. I was informed that she remained in good health.

The operation was done in this case with full knowledge of its probable incompleteness, this being due, in the first place, to the wishes of the patient and to the fact that it was preferable to complete it at a later time if it should become necessary.

Four months later that time seemed not yet to have arrived.

Under similar circumstances, I should be again willing to risk dividing the operation.

In spite of the fact that the microscope shows very early gland involvement in the majority of cases, it is possible, in a scirrhous growth like this, for metastasis not to have occurred at the time of operation.

Case 2.—Mrs. P., aged forty-six, a farmer's wife. Sarcoma of the right upper pectoral region and the upper part of the mammary gland. About December, 1893, she felt a burning sensation in the skin of the chest over about the

fourth rib. The spot also looked as if burned. It next took on the appearance of a boil, or "rising," of normal skin color, save in the center where was a band, about one-half by one inch in dimensions, of purplish color. The growth was hard to the touch, its borders well defined.

It gradually enlarged, until April 28, 1896, to a roundish, small hen egg-sized tumor of the skin and subcutaneous tissues. The overlying skin had been involved from the beginning. The only discolored part was still the perpendicular, purplish band across its center. The middle of a line between the anterior border of the right axilla and the center of the sternum would mark the central part of the growth. Sensations of a burning character had been present from the beginning—in fact, this feeling first attracted her attention to the disease. The burning was worse when she was exposed to heat. She first thought it was a burn from hot grease, but this was not possible, through the fact that her clothing covered the part. She remembered no injury to this region.

On April 28, 1896, her physician excised everything which he thought diseased. The mass removed weighed eight to ten ounces and was the size of a small fist. Two stitches were used to close the elliptical wound, but they did not hold. At the first dressing there was pus, and then an attempt was made to obtain healing by granulation. But the disease soon reasserted itself, showing a red areola and becoming decidedly active about four months later. The fungoid appearance dates from this time, her friends said, corresponding with a change in the form of dressing.

At the time of my examination, about two months later, there was in the center of the right pectoral region, a firm, rounded, smooth mass with hard base; the edges near an inch thick, the skin adherent. It was four by four inches in actual size, apparently movable over the pectoralis major, but continuous with the upper segment of the mammary

gland. The skin over its edges was from a deep red to a purple color. In the center, comprising about one-third of the growth, it was elevated about one inch over the rest of its surface. This elevated part was irregular, papillomatous, cauliflower-like, fungoid and grayish, with thin, whitish, purulent fluid between the masses. In the center of this there was an irregular opening, apparently as deep as the growth, and of the size of a walnut. At the upper edges of the fungous part was a finger-tip-sized, carbuncle-like lesion. These were said to be frequent and of short duration. The fungoid mass had overhanging edges. Now and then she experienced a "shooting pain" towards the axilla. In spite of antiseptic dressings, there was a decided odor. The lymphatic vessels and glands towards the axilla could not be felt.

When the disease first appeared she weighed nearly two hundred pounds, but since then her weight had gone down to 150 or 160 pounds. The menopause occurred after the excision of the first tumor. She contracted a cold two months before my examination and had a cough, dating from that time, without chest pain, the sputum being of light color and thick. Lung resonance seemed perfect and the pulse normal. There was no appearance of cachexia, and she had done her housework for most of the time. I could discover no evidence of internal metastasis.

The night before the operation I shaved the axilla and scrubbed the field of operation with soap, ether and bichloride solution. The fungoid part was cleansed with peroxide of hydrogen; ten per cent. iodoform gauze was packed in the opening, and spread over the whole area, being held by a bandage.

Drs. Jones and Bates, of Murray county, assisted at the operation. The room having been heated, the patient was stripped to the waist, and the anesthesia begun, after the ordinary hypodermic dose of morphia and atropia. Four

ounces of chloroform were used and the operation then completed under ether, the chloroform being used at first on account of the cough. The entire field of operation was cleansed as the evening before. The instruments and everything which would touch them or the wound were thoroughly sterilized. A preliminary incision was made curving downward about an inch below the nipple, from the center of the sternum to the anterior border of the axilla. Then a second incision—curved at least an inch above the border of the tumor, and extending near to the clavicle—was made from the center of the sternum to meet the first at the axillary border. The mammary gland and the tumor mass were then separated from the pectoralis major and left attached only near the axilla. The incision was then carried along the lower edge of the tendon of the muscle to near its insertion at the humerus. After reflecting the skin and fat, a director and the fingers were worked down to the axillery artery and vein. The entire axilla was then thoroughly cleared out, with, I regret to say, a little more tearing than cutting. A few bean-sized glands of livid color were found here, but none at the lower border of the muscle.

All spurting arteries were caught with forceps, being tied later, if necessary, with sterilized catgut. As the center of the diseased mass was found to have involved the pectoralis major, this muscle was now entirely removed from the chest wall, leaving only a narrow part along the edge of the deltoid, and the tendon. As the pectoralis minor appeared healthy it was not disturbed.

(The patient having become chilled, was given a little whiskey hypodermically.) The operation was completed in an hour and forty minutes, suturing and dressing requiring about three-quarters of an hour more. Before closing the wound an opening about two inches long was made at the bottom of the pocket left by the removal of

the gland, at the insertion of the serratus magnus. A sheet of ten per cent. iodoform gauze was laid over the wound, and one end folded and brought out at the drainage opening below.

The wound and adjacent skin were thoroughly cleansed, bleeding controlled by hot water and perhaps two vessels ligated. The skin and fat over the sternum were cut under for an inch or two, the edges of the wound were pushed together and held with seven tension sutures of silkworm gut. Badly fitting margins of skin were cut away, and the entire wound margins were then brought in apposition with a continued suture of catgut.

The line of union as well as the incision for drainage was covered with iodoform one part, acid boric five parts; then many layers of iodoform gauze were applied, and over all an abundance of salicylated cotton, and finally about twenty-four yards of three-inch bandage to hold the dressings and confine the arm. The patient reacted well.

The operation was completed about noon and I left early the next morning. I heard nothing from the patient for exactly three months. Then the doctor wrote that she was apparently sound and well. He had removed the gauze drain the second day and the dressings on the seventh day. He says he found a half pint of pus under the dressings, but her temperature had never been over 100 degrees nor her pulse over 90—a remarkable circumstance. I hope that it was not pus which he saw. At any rate, he wrote that a part of the margins were lost and the corresponding portion of the wound healed by granulation. The patient complained only of a little tension on that side.

This case was operated upon in a farmhouse in Murray county. The air and surroundings were good. I carried to the place everything which could be needed, save the water and fire, and the doctors who assisted me brought nothing. I confess that I did not clear out the axilla in

the best manner, by pure dissection, but as sarcoma does not so freely affect the glands, and was as likely to have gone elsewhere as in the direction of the axilla, I do not think I did any harm. Had I left any sarcoma cells the result would have been like that after the first operation.

There is no longer any doubt among well-informed physicians that malignant growths are at first purely local, and not constitutional in the sense that they can be cured by internal therapeutic measures. The carcinomata take their origin from cells which belong to the epiblastic or to the hypoblastic structures; in other words they are of epithelial origin. The sarcomata are growths of mesoblastic origin, they belong to the connective tissue structures.

Benign tumors show no tendency to the separation, migration and transplanted growth of their elements. Such a course is characteristic of malignant growths, in fact this feature of metastasis constitutes their malignancy. Many benign tumors are encapsulated or well defined, and a cure is had by ordinary excision. Malignant tumors cannot be so easily eradicated, because of their tendency to metastasis, unless the excision is done before metastasis beyond the visible borders has occurred. Malignant growths have no wall nor capsule, even the apparent capsule of a sarcoma showing evidence of the disease, under the microscope.

Absolute removal or destruction of a malignant growth insures its cure, but this treatment may either be impossible, or the surgeon may make the mistake of operating as for a benign growth. Not only must the tumor with a large margin of apparently healthy tissue be removed, but every particle of possibly diseased tissue must also be included in the mass. For example, if the lower lip be involved and the glands beneath the jaw, the lip, as widely as necessary, and all the tissue between it and a point below the diseased glands must be excised in one piece. If it be a simple appearing sarcoma of the foot or hand and we are

not absolutely sure that it is yet local, amputation had best be done at once, rather than wait until amputation must follow amputation and death follow at last.

There is no excuse for a visibly epitheliomatous lesion of the penis being treated by simple amputation, if the inguinal glands are involved, and then skipping over and removing the diseased glands. If cells have traveled along the lymph channels to gain access to the glands, it is more than likely that others are in transit when we operate. If we leave the infected channels, we do not treat the case properly or successfully.

What is necessary in mammary cancer is necessary in cancer of any other part.

A point which McClellan brings out in his "Regional Anatomy" is apparently overlooked by many surgeons. The lymphatics which lead from the inner segment of the mammary gland pass between the ribs into glands beneath the sternum. Now, if the disease involves the inner part of the breast it seems reasonable that metastasis should take place towards the substernal region, and thence upward, along the internal mammary vessels, to the subclavian region. Then, there is a superficial lymphatic channel from the nipple to a gland beneath the outer border of the clavicle. Such being the case, an operation devoted entirely to the region between the sternum and the apex of the axilla, thence upward under the clavicle, may leave untouched an active focus of disease. Until every point of lodgment for cancer cells is removed the treatment falls short of success.

An English surgeon has lately stated that the mammary carcinomata show early metastasis to the bone marrow. If he is correct, there is but one chance of successful treatment, and that is an important element to have in any case, namely, early diagnosis and treatment.

As regards skin metastases and so-called recurrences,

there are cases in which neither of these factors seems sufficient to explain the condition present. This applies especially to skin cancer. We know that multiple epithelioma ta do occur on the skin. It is also a fact that both mammary glands may be affected with carcinoma.

The possibility that more than one focus of disease can exist should not be forgotten, and all cases which show the disease at other points than those treated should not be set down as having originated from the one diseased center. If a person has a carcinomatous tendency, he can develop more than one, each independent of the other.

This statement is made with the knowledge that the majority of carcinomata do originate from one original focus, but there are certain cases in which the surgeon should not be held responsible for another cancerous development any more than he should be charged with the occurrence of the disease in some one else.

DISCUSSION ON DR. HUTCHINS'S PAPER.

Dr. Bernard Wolff, Atlanta: I desire to say, whatever be the pathogenesis of malignant disease of the mammary gland, the indications of treatment are clear. It must be renewed. But we frequently find cases, particularly in young females, of sarcoma of the mammary gland, where it is expedient to use palliative treatment. The patient is reluctant to consent at once to a radical operation, and in this connection I would suggest electrolysis as a therapeutic possibility, and mention a case that I had some two years ago in a girl of fifteen. A macroscopic examination showed that she had sarcoma of the mammary gland. At first she refused to have the gland removed and its contents taken out. As a compromise I suggested that she allow me to employ the electrolitic method of treatment. I used a saturated solution of potassium iodide on the negative electrode of a galvanic battery for about three months,

giving daily applications in dosages varying from five to ten milliamperes. The result was very gratifying to me, although not particularly so to the patient. The growth under this treatment diminished appreciably in size, but finally the patient came back and the mammary gland and axillary contents were removed by a surgical operation. As I said at the outset, whatever be the pathogenesis of cancer, the disease must be removed *in toto*. This is a classical truth. Intermediate measures are scarcely acceptable, but inasmuch as we cannot always apply strictly the dicta of science, we must be more or less influenced by the wishes of our patients. To this end the iodide of potassium was used, and caused a decided diminution in the size of the sarcoma. The girl had about reached the age of puberty, the breast being as large as a cocoanut.

Dr. Gaston, of Atlanta, had a case of inoperative sarcoma in the inguinal region, in which there was absolute disappearance of the growth under the persistent use of Donovan's solution by cataphoresis.

Dr. Westmoreland: This is a very interesting subject. I would ask Dr. Wolff whether his case was one of carcinoma or sarcoma, which I consider a very important part in the consideration of these cases.

Dr. Wolff: It was sarcoma. Dr. Nicolson, of Atlanta, subsequently removed the breast, and it was found to be sarcomatous.

Dr. Willis F. Westmoreland, Atlanta: It occurs to me that in the consideration of this subject we must take due cognizance of statistics. Out of eleven cases, carefully examined, 53 per cent. of them were cancerous, 24 per cent. carcinomatous. In other words, in all malignant diseases the percentage is in favor of carcinoma. In tumors of the breast, fully 90 per cent. are carcinomas. They rarely, or never, occur until after the age of thirty. I do not believe there it a well authenticated case recorded in medical liter-

ature where this disease has occurred under the age of thirty. I will venture to say, that carcinoma never appears in young females with a developing breast, but nearly always appears during the functional decline of the breast. We may take it for granted that, so far as recurrence is concerned, the disease always appears in at least 90 per cent. of the cases in glandular tissue. Only in about 50 per cent. of the cases that come for examination is the skin involved; while in 70 per cent. of them the glands are implicated. Of 117 cases where the glands were examined, in all except two the changes were not perceptible to the touch because of the thickness of the cellular tissue of the carcinoma. I think radical treatment in these cases is indicated from the beginning. The history of surgery in this respect has never shown that either electrolysis, erysipelatous injections, or any other treatment of a similar nature, in the hands of those who are not prejudiced, has done anything except to increase the trouble which is already present. Taking it for granted that the statistics are correct, there is no treatment which practically amounts to anything except radical operation, and this should be performed just as soon as possible. In the case of a woman with a beautiful breast, esthetic taste should not appeal to the surgeon or to the woman. The treatment should consist of complete eradication of all of the diseased tissue, which means that the surgeon has got to remove the glands, not only so far as the breast itself is concerned, but with reference to the possibility of recurrence. Now, it has been shown that 90 per cent. of recurrent carcinomas occur in the axilla. The axillary glands, therefore, should be removed at the primary operation. This cannot be done without removing the pectoral muscles. Inasmuch as a large percentage of the cases of cancer appear in the skin, the incision should be extensive with a view to removing all of the skin involved in the cancerous area. In the op-

eration the pectoralis major should be taken out and the pectoralis minor split; in other words, we should do a Halstead operation with one exception. When the disease is advanced, in the majority of cases the nest of glands is involved, and I never had a clearer demonstration of this than in a case which I encountered about two months ago. I had almost decided not to pick up the glands in the dissection, as they looked and felt normal, but were found to be carcinomatous. I decided to remove the pectoralis muscle, and in doing so found the gland as thick as a marble attached to the axillary vein, so that I had to dissect the axillary vein for about three inches of its continuity in order to get rid of the vein. The glands presented absolutely no pathological appearance until after the pectoralis minor muscle was taken out, and then it was found that they were not only involved, but were attached to the axillary vessels, so that it needed the dissection of these vessels to get rid of them. (Here Dr. Westmoreland detailed and demonstrated a modified technique of the Halstead operation for the removal of carcinoma of the breast.)

Dr. Hutchins (closing the discussion): I only wish to make one or two remarks. In my paper I did not say or claim that my operations were ideal. I had to do what I could for the patients.

Regarding electrolysis or cataphoresis in the treatment of these tumors, I would be afraid of it. I fear I would stimulate the growth by its use, although there are many things which have either influenced or caused the disappearance of sarcoma. In the case reported by me I did not see any manifestations in the skin of a recurrence of the disease at the end of four months. If a reappearance of the tumor had taken place, I believe it would have been noticeable in that time. When I operated I fully expected to operate again, to the extent necessary as soon as I could obtain the consent of the patient. She finally moved to Chattanooga.

I believe the last case was one of sarcoma, and that it is cured.

With reference to general operative measures, I believe that a complete and radical operation is the thing to do, but I am unwilling to accept the view that such an extensive excision of the skin is necessary in all cases, as advised by Dr. Westmoreland. If my patient with sarcoma developing within the skin above the border of the breast has not sarcoma of the lung, I believe she is cured.

EPIDEMIC INFLUENZA, OR LA GRIPPE. ITS DIFFERENT PHASES AND NERVOUS TENDENCIES.

By W. O'DANIEL, M.D., Bullards, Ga.

Influenza, uncomplicated, is known to be a self-limited specific disease, affecting the respiratory organs, and generally ushered in by rigors, and not infrequently by well marked chills, followed by fever and catarrhal symptoms. The terms influenza and *la grippe* are diagnostically considered synonymous, and indicating one and the same disease. No country in the world has escaped the ravages of this disease, so far as I know. The suddenness of attack, even of a whole continent almost at the same time, is not new, but wonderful and unaccounted for to the satisfaction of our progressive scientists. It has been supposed to be infectious, but its rapid spread over the whole country, nearly at the same time, rendered that theory highly improbable, and the causation by atmospheric and meteorologic changes more reasonable; but later on, scientific investigation has thrown new and progressive light by the discovery of the "germ theory," which enables us to consider more intelligently the development of the *la grippe* ptomaines, in whose presence we all stand, and may be infected by the bacillus of Pfeiffer, provided the conditions are favorable for development, and stay until destroyed by germicidal remedies, and, if not done, his dangerous inroads and ravages continue to prey, without physical resistance, until the deadly work is accomplished. Possibly we talk and write more from a theoretical standpoint about

the destruction of bacteria by germicides than we practically understand. Most physicians of to-day, who have been educated in their profession, are at least partially committed to what is known as the "germ theory," but ask them if they have an infallible specific or germicide or antidote. The answer will likely be, well, I cannot say that I have; but ask them if they have a specific or an antidote for malaria that can always be relied upon. The answer will be yes. Quinine is the infallible specific. This has been known by every practitioner of medicine ever since the discovery and use of cinchona, and is now understood to a limited extent even by the laity. Supposing the "germ theory" to be correct (which I do not doubt), is it not possible, as well as practical, for us, when we find that we are in the midst of an epidemic of influenza, to make the conditions for the extensive development of germs unfavorable and thereby lessen the frequency of some of the dangerous sequelæ, by supporting, as best we can, patients depending upon us for protection against disease and death from the beginning or from the initial stage of the attack of influenza? If this can be successfully done, the constitutional powers of resistance are thereby increased by prophylaxis, as well as the *vis medicatrix naturæ*, thereby lessening the dependence on our own ability to combat the innumerable train of symptoms which we are likely to encounter during the course of the disease, by remedial agents, should it assume the neurotic and other phases, such as neuralgia, manifesting itself along the course of the sensory nerves and frontal sinuses (the orbital foramina being often the seat of paroxysmal pain). These pains, however, may be felt wherever there is a nerve, and the varieties of neuralgia are numerous. Impeded and disturbed locomotion, vertigo, middle-ear troubles, impaired vision of one or both eyes, quick consumption, even where there is no traceable heredity, pneumonia,

and especially the latent type, which is both insidious and deceptive, indigestion, impaired virility, general muscular soreness, rheumatism, nasal catarrh, headache, sore throat, and various supervening pathological changes and conditions, and not infrequently a general wasting, caused by some of these numerously mentioned complications. These different phases and neurotic tendencies are doubtless fruitful sources of insanity in some of its forms. The after effects of influenza are not always in proportion to the intensity of first attack, but often assumed, after convalescence, by relapses, which, in many instances, could be prevented by rest and prudence in a well ventilated room, with equable temperature, where sudden transitions of heat and cold should be strenuously avoided, in order, if possible, to secure immunity from these dangerous sequelæ, so that *permanent* and speedy recovery from first attack may ensue. Prudence, hygiene and alimentation always play an important part in the successful preventive treatment of la grippe sequels, and is an important factor in reducing the death-rate.

Relapses and slow and imperfect recoveries are not so common in milder climates, where weather changes are infrequent. Many patients succumb to the after effects of influenza from sheer neglect, because their sufferings are not sufficiently distressing at first to admonish them that danger is apparent and the advice of a physician is necessary. I have recently known a mother of fifty and a daughter of twelve years to die of quick consumption, where there was no hereditary predisposition, without seeking medical advice until absolutely too late, because they and their friends *persistently* contended that they had only a bad cold.

When influenza proper is not followed by some one of the long train of complications, the usual course is about one week, then convalescence and recovery.

In recent years, say since 1889, its annual visitations have been expected in the United States, and we have not often been disappointed, although the phases and tendencies have somewhat differed; so much so, I think, as to make differential diagnosis necessary to discriminate between the different *forms* of the sequelæ, now so common. There are certainly distinctive features in the sequelæ sufficient to require altogether different lines of treatment to meet the *various* indications.

After all, we are compelled to treat symptoms as they develop and not the names influenza or la grippe. It is pretty well established that the after effect of influenza is more to be dreaded than the primary attack, for it is more lasting and more dangerous to human health and life. This fact is almost daily demonstrated by those who have suffered from la grippe, and who have had imperfect recoveries, to date the commencement of any subsequent physical disability to the time when they had "grippe," more especially people well advanced in age and with whom fatalities are much greater than younger people.

That diseases do assume different phases, tendencies and types, I presume will not be denied. A very clear illustration of this fact, to my mind, is had in malarial hemorrhagic fever, which is only a different form of pernicious bilious fever, known to follow intermittent and remittent types in districts where there is a superabundance of malaria. It is certainly of malarial origin. I never saw a case of malarial hemorrhagic fever that had not been preceded by the toxic influences of malaria. This hemorrhagic phase, in a malignant form, only appeared in localities favorable to malarial fevers as late as 1868, and continued its annual visitations (generally in autumn months) for about fifteen years, at the end of which time its malignancy began to lessen, and *now* this hemorrhagic condition, which was at one time almost a symptom of dissolution, is exceedingly rare; only now and then a spasmodic case is

seen in Georgia, so far as I know. This superabundance theory may be considered hypothetical by some, but why so, when this peculiar morbid condition did not appear in Georgia to any remarkable extent until 1868, although intermittent bilious and remittent forms of malarial fevers had prevailed from time immemorial in the very locality where this hemorrhagic form made its appearance.

It is never met in localities free from malarial poison. As a rule, anemic subjects, whose blood corpuscles have been disintegrated by malarial poison, were the victims. This hemorrhagic phase is generally in proportion to the intensity of the malarial attack and the condition of patient at the time of attack. The causes of its disappearance, to my mind, are first, that we have less malaria; secondly, the antidote quinine is more generally employed, or perhaps each has influenced the absence of this tendency.

If overdoses of malaria are the sole and promoting causes of this virulent type, should we again have more than our usual share of this invisible miasmatic element, why not reasonably expect recurrences of the same morbid conditions? The causes of malaria are said to be specific vegetable micro-organisms. Klebs claims to have discovered the germ from marshes and lowlands and has named it bacillus malaria. Laveran's hematozoa is said to be *always* in the blood of those suffering from malaria, and the different species cause the distinct types of malarial fevers.

These investigators deserve great praise for their discoveries and should be commended by all unselfish investigators, as well as suffering humanity everywhere. But whether or not much has been added to our therapeutic knowledge in this particular malady, so far as the treatment is concerned, is yet a question, as we still rely mainly on the same old and reliable specific, quinine, and its alkaloids, as the sure antidote. I trust this digression is pardonable, as I only desire to emphasize the tendency to morbid changes in certain diseases, *especially* the two mentioned in this paper.

CAUSE AND PREVENTION OF CONSUMPTION—IS IT A CURABLE DISEASE?

By J. S. TODD, M.D., Atlanta, Ga.,

Professor Therapeutics Atlanta Medical College; Ex-President of the Association, Etc.

Consumption is a contagious and infectious disease, preventable and curable.

It is generally defined as an infectious disease only.

The two words contagion and infection are often used synonymously, and the confusion which has arisen therefrom is not settled. Therefore it best serves my purpose to say it is both, at the risk of being scientifically inexact.

That it is contagious and infectious is proven by the fact that it can be inoculated; that the air of an apartment or locality can be so highly impregnated with the specific cause that its inhalation will give rise to the disease; that in a dried state—as on clothing—it can be transported and not lose its virulence, as is so often exemplified by the frequency of washerwomen contracting the disease from those infected.

That the disease is caused by a specific organism, the tubercle bacillus of Koch, a germ *sui generis*, is now almost universally admitted.

His demonstrations have stood all the tests and fulfill every assertion; the specific organism is always present in every case.

In the language of Dr. Ainsworth, of Brooklyn, N. Y., in volume LXX., number 3, *Medical News*, "It has satisfied every condition of proof that can be demanded, in that it

conforms to the requirements of the formulated proposition to demonstrate that a given disease is caused by a specific organism.

1st. It is present in all cases of the disease, and in such distribution as will explain the lesions.

2d. It can be isolated in pure culture.

3d. The disease is reproduced by inoculation with the isolated organism.

More convincing proof could not be procured nor reasonably demanded.

The disease is not hereditary; that is, a child is seldom born with it, so rarely that the exception proves the rule; one in 22,000,000 chances.

The children of parents, both consumptive, need not necessarily have the affection; indeed such progeny, if isolated or passing their lives in a locality where there were no cases of the disease, would never contract or develop it. They are more predisposed to the malady than the children of the healthy, if exposed; they inherit a soil that furnishes ready and rich pabulum and favorable conditions for its growth and development, but the germs, the cause, is the product of contaminated environment, not a development of inherited tubercle. But isolation or absolutely pure air, is not necessary to at least greatly reduce the prevalence of phthisis, now that we know the cause.

Another fact brought out by knowing the cause, is that none of us are immune. It can be contracted, and it is a sad fact, often the case by those with no hereditary predisposition, for individuals with no history of tuberculosis for generations succumb to the malady, and whole communities which but a short while ago were celebrated as health resorts for consumptives are now peopled by a rapidly disappearing population, victims of this contagious disease.

As illustrations of the latter assertions, Monaco, in

France, and the greater prevalence of the affection in Colorado, Florida, Southern California, or wherever consumptives congregate, are unanswerable proofs of its contagious and infectious character. It was practically unknown among the negroes when they were slaves; now it is so common with them that it has failed to excite comment. It is generally stated by the best informed writers on this disease, that one-seventh of all the deaths are attributable, directly or indirectly, to the ravages of this minute germ. No country or people are totally exempt; all living animals, even the cold-blooded, are inoculable with it.

We dread cholera, plague, smallpox, diphtheria, yellow fever, but none of these are more contagious than consumption; all put together do not cause half the mortality; each of the first named are only occasionally with us as epidemic, and are under strict police surveillance, guided by health authorities to prevent their spread; the latter has become almost a household disease in many localities; no community is exempt, and still we raise no warning voice. The people think the disease is hereditary entirely; therefore not preventable. But I am thankful that the great city of New York has awakened to the importance of the subject and after a campaign of information, lasting several years, has at last declared consumption a communicable disease, and made it incumbent on physicians to report all cases to the health authorities. Their circular of information is so replete with information that I incorporate it entire in this article. It is published in English, German, Italian and Hebrew, and scattered broadcast—verily "bread upon the waters." I ask your careful attention to its reading:

Information for Consumptives and Those Living with Them.

Health Department, Criminal Court Building, Centre, White, Elm and Franklin Streets, New York.

Consumption is a disease which can be taken from

others, and is not simply caused by colds. A cold may make it easier to take the disease. It is usually caused by germs, which enter the body with the air breathed. The matter which consumptives cough or spit up contains these germs in great numbers—frequently millions are discharged in a single day. This matter, spit upon the floor, wall, or elsewhere, is apt to dry, become pulverized and float in the air as dust. The dust contains the germs, and thus they enter the body with the air breathed. The breath of a consumptive does not contain the germs and will not produce the disease. A well person catches the disease from a consumptive only by in some way taking in the matter coughed up by the consumptive.

Consumption can often be cured if its nature is recognized early and proper means are taken for its treatment. In a majority of cases it is not a fatal disease.

It is not dangerous for other persons to live with a consumptive if the matter coughed up by the consumptive is at once destroyed. This matter should not be spit upon the floor, carpet, stove, wall, or street, or anywhere except into a cup kept for that purpose. The cup should contain water, so that the matter will not dry, and should be emptied into the closet at least twice a day, and carefully washed with hot water. Great care should be taken by a consumptive that his hands, face and clothing do not become soiled with the matter coughed up. If they do become soiled, they should at once be washed with hot water and soap. When consumptives are away from home the matter coughed up may be received on cloths, which should be at once burned on returning home. If handkerchiefs are used (worthless cloths which can be burned are far better), they should be boiled in water by themselves before being washed.

It is better for a consumptive to sleep alone, and his bed-

clothing and personal clothing should be boiled and washed separately from the clothing belonging to other people.

Whenever a person is thought to be suffering from consumption, the name and address should be sent at once to the health department, on a postal card, with a statement of this fact. A medical inspector from the health department will then call and examine the person to see if he has consumption, providing he has no physician, and, if necesssary, will give proper directions to prevent others from catching the disease.

Frequently a person suffering from consumption may not only do his usual work without giving the disease to others, but may also get well, if the matter coughed up is properly destroyed.

Rooms that have been occupied by consumptives should be thoroughly cleaned, scrubbed, whitewashed, painted, or papered before they are again occupied. Carpets, rugs, bedding, etc., from rooms which have been occupied by consumptives, should be disinfected. The health department should be notified, when they will be sent for, disinfected, and returned to the owner free of charge, or, if he so desires, they will be destroyed.

By order of the Board of Health,
Charles G. Wilson, President.
Emmons Clark, Secretary.

Comment is unnecessary; commendation is all I have to bestow. There has been a very perceptible diminution of consumption in New York in the past five years.

Is the disease curable? My object being to disseminate the truth, not to magnify myself, let Vaughn, of Ann Harbor, answer, and I beg no pardon for having him say for me what I believe, especially as he does it so much better, and it should, and doubtless does, carry with it so much more authority:

"In 1882, Baumgarten wrote, in sum and substance, as follows: Tuberculosis is in and of itself not so bad a disease. We do not believe that it possesses as a contant property, the considerable local malignancy which Freidlander believes he must still unconditionally attribute to it. When we see individuals, who, as children, had thickened tuberculosis, cervical glands or tuberculous disease of the joints, develop into the strongest and handsomest men; when we see people, who, in childhood, had Pott's disease, which is always due to the tubercular caries of the vertebræ, live for years with this deformity, and reach advanced age; with such observations as these so frequently before us, we must conclude that tuberculosis is not so deadly as is usually supposed."

Tuberculosis, as long as it remains an unmixed infection, it not a deadly disease, and I believe it to be, in this stage, one of the most easily curable of the bacterial diseases. Except in the form of acute miliary and meningeal tuberculosis, it is but seldom the direct cause of death. However, as soon as it becomes a mixed infection, and is something more than tuberculosis, it then takes rank as the most fatal of all diseases now afflicting mankind. In combating this disease, there are two points of attack, and if the wisdom and skill of the profession be directed to these, the death-rate from tuberculosis will be much reduced in the near future. The first and most important method of dealing with this disease consists of the application of preventive measures. The second, the one with which I am now concerned, consists of the treatment of the disease while it remains an unmixed infection. When this is done, tuberculosis will cease to be "the terror of the laity and the cross of the physician." In order to accomplish this work, however, we must put aside certain dogmas, which we have so long mistaken for facts that their shadows frighten us. We must be convinced that as an unmixed infection it is

curable. We must be able to recognize the disease while it remains an unmixed infection. We must cease regarding certain conditions as evidence of existence of indefinite, imaginary, so-called "pre-tubercular" state, and must learn to look upon these conditions as proof of the actual existence of tuberculosis. I will now give attention to these points, and in doing so I will consider them quite apart from the claims which I may make for nuclein or any other agent employed for curative purposes. One-seventh of all men die of tuberculosis, and one-third of all men have the disease. The first part of the preceding statement is shown to be true by the mortality statistics of all civilized countries. The second part of the same statement is shown to be true by the records of autopsies in various parts of the world. Massini found evidence of tuberculosis, as shown by scars, indurations, cheesy and chalky foci, in eighty-nine out of two hundred and twenty-eight autopsies made upon persons who had died of diseases other than tuberculosis at the Basle Hospital. Muller found, in the Munich Pathological Institute that tuberculosis caused 29.4 per cent. of deaths in adults, and 30 per cent. in children, and that 11.8 per cent. more of the children had tuberculosis. Bollinger's researches confirm these statements. Baumgarten stated that from one-fourth to one-third of all the bodies sectioned show tubercular lesions. Ilneyrat found tuberculosis in 31.4 per cent. of the children examined. Lundonzy reports that 30.4 per cent. of the children brought to autopsy are tuberculous. Babies found tubercular deposits in half the children dying from all diseases at Bucharist; in 1887 he sectioned 93 children, 65 of whom had tubercular glands. Haitmel claims one-third of the children examined at L'Hospiel des Enfants Assistes show tubercular lesions. Simonds, Schwer, and Boltz state that autopsies of the

Anatomical Institute at Kiel of 781 children, aged from one to five years, show tubercular lesions in 230; of 228, between five and ten years, 78 were tubercular; of 162, between ten and fifteen years, 56. Wolff states that autopsy reveals either recent or old tubercular lesions in from 40 to 45 per cent. in adults, and in 60 to 70 per cent. of children; also that 30 per cent. of adults and 40 per cent. of children have latent tuberculosis. Schlenker found in one hundred consecutive autopsies at Zurich, 66 bodies tubercular; 35 of these had died of tuberculosis; in four others the disease was marked, but had not caused death; while in twenty-seven it was latent, and had not been suspected during life. In this examination no lesions were pronounced tubercular unless it was evident and characteristic to the unaided eye. He points out the fact that had the indurations been examined microscopically, the percentage of cases of latent tuberculosis would have been increased. According to Adossides, of 4,815 bodies sectioned at Halle, from 1882 to the middle of 1893, 1,066 showed gross tubercular lesions. These, and other statistics of like import, justify the assertion that about one-third of all men are, at some period of life, inflicted with tuberculosis. Now, if one-third be inflicted, and one-seventh die of the disease, it must be that the difference between one-third and one-seventh, a little more than one-fifth, are tubercular, and do not die of the disease. Of the sixty-three millions of people living in the United States in 1890, nine millions have died or will die of tuberculosis, while twenty-one millions have been, are or will be infected with the bacillus tuberculosis. Does not this demonstrate that tuberculosis does not possess the malignancy attributed to it. The fact that one may be infected with tuberculosis and such infection remain localized for many years, is shown by the study of cases of lupus. The study of instances of accidental inoculation with the bacillus of tuberculosis in wounds, sometimes

known as cadaver tuberculosis, tends to similar results. Tuberculous joints often heal, and the child afflicted in this way may develop into the most robust adult. The evidence that tuberculosis of the peritoneum occasionally undergoes a spontaneous cure, and frequently heals after laparotomy is no longer questionable."—*Vol. LXV., No. 10, Med. News.*

Tuberculosis is phthisis pure and simple; caseous pneumonia is tuberculosis of the lungs unmixed; consumption or phthisis is mixed tuberculosis, tuberculosis plus something else; each has the same origin—the tubercle; one the spring, the fountain-head; the other, the mighty, swift, muddy, and irresistible river.

I have no fixed prescription to give as a cure for consumption, and do not believe as yet we have any specific, but that millions die because we do not recognize the disease early I firmly affirm.

We should seldom diagnose a case as consumption, even in the latter stages, when all the general train of symptoms, physical and otherwise, are present, positively, as undoubtedly such, until we can and do find the bacillus; nor, on the other hand, should we conclude that we have made a scientific diagnosis—a diagnosis by exclusion—in any case, with the least suspicious symptom, until we have failed to find it, after thorough and repeated microscopic search. While the figures given by Vaughan as to the prevalence of tuberculosis are far below those of others, I will grant you that for these United States they are still too high, but even then, look with horror at the picture.

Reducing this statement, that one-third of those now living in our own country have or will contract the disease, to one-fifth; and the mortality of the disease as a cause of all deaths, to one-tenth, and what do we read? Listen! Of the 70,000,000 people in these United States, 14,000,000 will contract tuberculosis, if preventive methods are untaught,

unknown and unheeded; 7,000,000 will fill premature graves to gratify this insatiate monster, the bane of humanity, if we fail to diagnose in its incipiency.

Truly the harvest field for good is vast; shall the laborers be few?

To prevent is better than to cure, and while I would not detract from the luster and fame that belongs to discoverers of the specific for malaria, quinine, and thank God for those bright stars, Couventou and Pellitere, yet we must not forget that all concede, that in the medical galaxy the star of greatest magnitude, surrounded by its halo of imperishable glory, is named Jenner the Preventer.

DISCUSSION ON DR. TODD'S PAPER.

Dr. E. H. Richardson, of Atlanta, was called on to open the discussion. He said: I am not in the habit of discussing papers extemporaneously as a rule, but owing to its importance, I wish to say a few words on the subject under consideration. I shall not speak of local tuberculosis often amenable to the resources of surgery, but will limit my remarks to pulmonary tuberculosis, the most prevalent form of consumption. Dr. Todd has presented a most excellent paper, which is a thorough exposition of the subject to date. There are some portions of it, however, which I cannot indorse. His statistics, showing the almost universal prevalence of the disease, coupled with its great mortality, I consider correct only when applied to the *fin de siecle* African, residing in the Southern States of North America. The civilized Caucasian race, I think, enjoy greater immunity from tuberculosis than Dr. Todd's statistics represent. Cornet tells us that the disease is diminishing in Prussia, and the records show the same to be true in Philadelphia and New York city, the two largest American cities.

Bowditch, in 1896, "urges that too great terror has been

excited by the efforts of the profession to convince the laity of the contagiousness of tuberculosis," alleging that the sputum is the only source of infection, and that when "properly destroyed, even hospitals for consumptives are not sources of danger to a community, but on the contrary, really a protection." I know of no remedy, *per se*, that will cure tuberculosis. I make no exception in serum-therapy as a curative agent. I think, with the distinguished author of the paper, that the disease is eminently a preventable one. The object of supreme importance in the treatment of the malady is to improve nutrition. I do not know anything that will cure the disease except climate and dietetics. I believe a number of cases are curable by a change of climate, where an outdoor life can be led and proper diet secured. The author of the paper is certainly correct in urging the importance of an early diagnosis and resorting to proper measures for treatment in the first stage of the disease. I know of but two methods by which pulmonary tuberculosis is cured. One is by fibrosis; the other by encapsulation. Observations in the dead house have conclusively proven that cases have been cured by these processes.

Concerning the inutility of remedies in the treatment of the disease, I will make one exception, to wit: cod-liver oil. Chemists have discovered that we have more than fifty different ingredients in cod-liver oil, and I consider it the remedy, par excellence, in the treatment of tuberculosis; where it can be assimilated results from its administration are far more brilliant than those accruing from the antiseptic treatment of the disease. Cod-liver oil improves the quality of the blood, and acts in some subtle way as a reconstructive to the animal economy that as yet we do not thoroughly understand. But I am sure that it modifies nutrition more favorably than any agent with which I am acquainted. I feel that I am personally indebted to Dr. Todd for his admirable and erudite article, and it gives me great pleasure to thank him

for preparing a paper of such conspicuous ability, and upon a subject so important to the human family as the prevention and cure of tuberculosis.

Dr. P. R. Cortelyou, Marietta: I have been much interested in the paper of Dr. Todd. It is a subject of great importance, and particularly the prevention of tuberculosis. As the doctor has stated, prevention is better than cure. No doubt, it is a curable disease in many cases. I have suffered from it myself, and I do know that I am positively cured, as for a number of years I have been free from the disease. We ought to be more careful in regard to the expectoration from the patient, thus preventing the germs from being disseminated through the atmosphere. I believe, too, that, in the way of prevention, climate, fresh air, sunlight, outdoor life, are the best preventives we have, and probably far superior to any medicine we use. The great trouble with the majority of cases of tuberculosis is that they do not come under the care of the physician until the disease has become mixed in its character and nutrition has been interfered with, and then the digestive organs are so much impaired that they are not able to take proper nourishment and assimilate it, and thus resist the inroads of the disease and overcome it.

Various methods of treatment have been used for this disease, and some have recorded successful cases treated with serum. In the cases in which I have tried Edson's aseptolin, I cannot say that I have had marked success with it. I have used it in several cases, and I fail to see any special benefit from it, except in one of two instances there seemed to be temporary improvement in the mind of the patient. This change is noticeable under almost any form of treatment for this disease.

Dr. R. R. Kime, of Atlanta: It seems to me this is one of the most interesting subjects that can be brought before this Association for discussion. The prevalence of tuber-

culosis in the people of to-day makes it a very important question for consideration by this Association. I think we are all pretty well agreed as to the contagiousness of tuberculosis, as well as its prevention. The next question is, what shall we do? Shall we take any steps to ameliorate the suffering people of our State? Shall we take any action that will have a tendency to prevent the spread of the disease, and the contamination of healthy individuals by the diseased condition? It seems to me that this is the proper time when this Association should take some action relative to this disease, and before the close of our meeting, or now, if I am in order, I shall make a motion in regard to the appointment of a committee from this body. I shall introduce a resolution that a committee be appointed by this Association to secure proper legislation in regard to the prevention of tuberculosis, and also to request the different local medical societies of the State to appoint one committee to act in conjunction with the committee of the State Society, for the prevention of tuberculosis in Georgia.

Dr. J. D. Chason, Iron City: I believe tuberculosis is a curable disease. I have seen tuberculous conditions of the throat cured by the use of cod-liver oil and beechwood creosote. So far as surgery is concerned, I am sure I have seen cases relieved where there was tuberculosis of the knee-joint, by amputation, where the patient was almost exhausted, and after the operation rapidly recovered and became strong. Surgery has cured many cases of tuberculosis of the knee-joint. So far as localized tuberculous conditions are concerned, I am sure some of the cases can be cured, but when the patient is so far exhausted with a tuberculous condition of the lungs, as we so often see, then the disease has so much sapped the vitality of the patient that nothing can take precedence in such cases.

With reference to the communicability of the disease, I consider that there are some patients who would resist all

of the germs that they inhale. These germs would not affect them, while there are others who are predisposed to the disease. I do not consider the infection an inherited one, but simply believe there is an inherited tendency to it. I know I have seen this tendency crop out in families as soon as their health was below par, but as long as they remained up to par, just so long they kept well.

Dr. Todd (closing the discussion): I wish to thank the gentlemen for their kind reception of my paper. There can be no question of the curability of tuberculosis. The only debatable point that I can conceive of is this: Dr. Richardson has confused tuberculosis with consumption. I tried to make a sharp distinction in my paper, and insisted that our past teachings and impressions are so indelible that we have figured the diseases as the same thing; and they are the same thing, that is, one is simply a spring, while the other is a mighty, irresistible river; contaminated muddy water, and a heap of it. That tuberculosis is curable has been demonstrated in a great many instances, for in one-seventh of the human family, after death, it is said there are found evidences of the disease having existed in the body.

The object of my paper is to endeavor to get doctors to recognize the disease early, to fight it before it becomes an irrisistible river—consumption—which is so seldom cured that it is the exception.

Now, with regard to a law for the prevention of the disease, with all due respect to Dr. Kime, and thanks for the evident impression I made on him, I cannot see how the enactment of a law is going to do any good. Let us be convinced in our own minds that it is a preventable disease, and then disseminate the information among the people. When we get public opinion in our favor, as they have in New York, we can then cast laws. It will do no good now. When we get the people and profession to think about it, they cannot help but be convinced. If a father could be

convinced that by spitting about the house he endangers his children, or sleeping with his wife will infect her, greater care would be taken. You may say it is hereditary; that the children are bound to have it. That was the teaching of my day and of the majority of physicians who are listening to me. We have found that is not the case. Let us unlearn some things. Let us educate ourselves by talking the thing. I said in my paper that I had no fixed formula for the cure of consumption. There is none. But there are many things that cure tuberculosis as a local disease; surgical means, aided by such medicines as cod-liver oil, hypophosphites, arsenic, tonics, and restoratives, outdoor exercise, sunlight, all these are contributing factors, putting the system in a condition so that it can resist the invasion of the disease. The greatest good must come from prevention, not from cure after the disease has once been established, although there are great possibilities in the clinical use of tuberculin, in serum therapy, but the watchword is prevention!

EXPERT TESTIMONY IN CRIMINAL CASES INVOLVING THE PLEA OF INSANITY.

By JOHN C. OLMSTED, M.D., Atlanta, Ga.

There are probably no circumstances or conditions under which the medical profession appears to as great disadvantage as those which I have selected for the title of this paper. It is true that much might be said on the same line concerning "medico-legal expert" testimony in general, especially as we see it illustrated but too often in "damage suit" cases, which have almost made the title of doctor, when introduced in such cases, a subject of ridicule and contempt to the legal profession, and of mirth and want of confidence in medical science on the part of the general public. Here, to one who loves his profession, the mortifying spectacle is presented of a certain number of so-called "eminent medical experts" swearing to certain alleged facts, and a number of equally "eminent experts" swearing to the contrary. The resulting impression upon the mind of "the court" and the enlightenment of the minds of the jury, thus attained, is more easily imagined than described. The demoralizing effect produced, as regards the weight and value to be attached to medical testimony is evident, and it is greatly to be doubted if, as regards the action of the jury, the "expert testimony" exercises much influence, excepting, possibly, that of a negative character, in deciding the ultimate result; the appearance of "the doctor" upon the witness stand having been regarded as a pleasant and diverting break in the monotony of the ordinary court proceedings, while it was the signal for the hangers-on and idly curious to press forward to "see the fun."

That this view is not strained or exaggerated any one familiar with such trials, either as seen in court or as reported by the daily press, must, I think, admit. If such spectacles are thus not infrequently presented by the "medical experts," and in the character of cases mentioned, are well calculated to bring the science of medicine into derision and contempt, how much more so must this be true in cases of criminal character, where it may be, from the atrocity of the crime committed, the attention of the public is fully aroused, and its eyes focused upon all the details of a sensational trial, in which the defense exhausts all the resources of able counsel in endeavoring to establish the existence of insanity, and thus claim that immunity from criminal responsibility which the law affords to those so afflicted, while on the other hand the prosecution seeks to disprove this claim, as the last resource of ingenious counsel, and insists that the ends of justice, and hence the interests of society, demand a conviction, it may be, of murder. It is, of course, in such cases as this, that the aid of the medical profession is naturally invoked. There can be no disorder of the mind without disorder of the brain. As physiologists and pathologists, we have to study and treat the latter; and for this reason the legislature enacts, that certificates of insanity shall be given by medical men, and by them alone; and that to their care shall be committed those who are insane Hence it follows that in these cases, involving the gravest questions of criminal responsibility, affecting on the one hand, it may be, the life of a poor, miserable, irresponsible lunatic, and on the other the interest of society, as influenced, it may be, by the escape, through legal subtleties, of an enemy of mankind; it is, I say, in such cases, that to the medical profession the public has a right to look for the conservation of the rights of all concerned, and the vindication of truth and justice. It is here that the preeminence of our noble profession should be most manifest

and its benign influence should shine most lustrous. From the calm, dispassionate verdict of medical science, whose "eye single to truth" knows no prejudice, can admit of no sophistry, there should be no appeal.

Is this result obtained, and are the claims of medical science thus sustained, by those who usually appear as its exponents? It is with very great reluctance that I opine that, in the majority of such cases, the answer must be "No!" Nor is it difficult to understand how this conclusion is almost insured by the present vicious system of obtaining and presenting medical testimony in such cases. It is not here proposed to enter upon the intrinsic difficulties involved in the medico-legal consideration of the subject of insanity, nor to discuss the legitimate differences of opinion which may occasionally arise between "doctors" in their inductions in a particular case of this most recondite of diseases; these difficulties are well set forth in and known to all familiar with medical jurisprudence. It is rather to another phase of the subject that I would address my remarks, namely, the method of obtaining and presenting medical testimony, and the attitude usually occupied by the so-called "experts." I use the term "so-called experts" advisedly, for seldom does it happen that the "expert" is really one who can base his claim to a specialistic knowledge upon a broad and deep study of psychological phenomena and familiarity with psycho-pathological results of medical experience, as formulated in the works of leading alienists. The method of obtaining and presenting "expert testimony" is well known. From the ranks of our profession each side selects certain physicians, either of known preconceived views favorable to their respective interests, or who it is presumed can be induced to entertain and advocate such views. The veteran practitioner and the new-fledged graduate, the profound scholar and man of science, the unprincipled quack and him with the forehead of brass, who holds a ten-dollar

"diploma" (perhaps from Wisconsin!), all are presented to the jury with equal dignity and sanction of law, under the comprehensive description of "experts." As has been well said (and that by a lawyer) "under this common guise trickery passes as skill, and assurance as wisdom." "Confidence, in many cases, bears a direct similitude and ratio to their ignorance." Well, however this may be, I contend that the "medical expert," whoever he may be, from the circumstances of the case, and at the very outset of matters, enters into the trial with biased and prejudiced mind, and appears upon the witness stand as a partisan. That the fair, calm, clear analysis and deliberate conclusion of medical science cannot be obtained under such conditions is, I think, self-evident. Doctors, I assume, like other people, have a good deal of human nature in them, and it must be admitted that under such circumstances the conditions are admirably adapted to induce the "experts" to take a one-sided view of the case. Employed to show one side of a case, it is perhaps natural that he should strain every point favorable to his side of the case, and yet look with cold and truly scientific criticism (?) upon everything unfavorable to it. Counter and conflicting testimony among experts awakens pride of opinion and personal feeling (two elements fatal to the claims of science), the "combat deepens," dogmatic self-assertion, prejudice, ill-formed and hasty conclusions and narrow inductions, take the place of the deliberate, calm, and accurate inductions of science. In fact, it would often seem that the "experts," in their heated zeal, entirely forgot their duty as exponents of science. The matter has with them degenerated into a forensic debate, in which each one is more anxious to achieve a personal victory than concerned for anything else. Considerable "speaking to the galleries" has been observed at times, and evidently appreciated by that not inconsiderable element of the public which regards such professional exhibitions as a "free

show." Newspaper interviews, with some "leading experts," are not unknown. On one occasion, in a case of this sort, where quite an array of medical talent had been enlisted, and a good deal of truly scientific opinion elicited, a distinguished "expert" was represented as saying that he "believed in looking at such cases in a common-sense way." I have yet to learn of any branch of science which ignores the element of "common-sense" in pursuing its particular methods; but it would have been well, in this particular application of the term, to have defined what was meant by "common-sense." If the usual meaning was intended, namely, the "common understanding of the mass of the people," I would then remark if there is any one subject upon which the common people are most notoriously ignorant and ill-formed, it is that of insanity. But to digress no further, as the result of the conflicting testimony of the warring doctors, one thing is apt to be assured, namely, the complete mystification of the jury. The aid which medical science should afford the law, in furthering the ends of justice, is frequently "conspicuous by its absence."

The "medical expert," originally admitted to the courts as *amicus curiæ* or "friend of the court," to aid the jury in elucidating the truth and arriving at correct conclusions, has now degenerated into the hired advocate in special cases, which he is expected to assist in winning, regardless of all other considerations. Hence, the dignity of the medical profession, and its claims upon the confidence of the public, is greatly weakened.

Having thus, inadequately enough, sketched some of the features of the disease, it may be asked: "What is your remedy?" I am free to say that I have no "cut and dried remedy," preferring to leave the formulation of plans, with their involved details, to the action of this Association. That a remedy is needed, I believe will be conceded, and I would only venture to add, that I think the assembled wis-

dom of this intelligent body should be directed to the securing of such legislation as would insure the establishment of a medical commission, selected (preferably it seems to me) by the ordinary and grand jury, which commission, by whatever means created, should have the medical decision of all questions involving our profession in such cases. Thus the best medical talent might be obtained, insuring to the law the unprejudiced, calm, and deliberate verdict of medical science. Adequate remuneration should be provided for such service—a matter notoriously needing reform under the present methods, which often compel the attendance of a medical man for days without proper remuneration, and sometimes with none at all.

In conclusion, permit me to say, that if I have borne rather heavily upon my own profession in my remarks, the just occasion for it is sincerely believed to exist, and the need of reform to be manifest. The complaint is made in "the home circle," and I trust that this association will take such measures to correct the abuses as will advance the interests, influence, dignity, and honor of our high calling.

Discussion on Dr. Olmsted's paper.

Dr. B. W. Bizzell, Atlanta: *Mr. President*:—I have listened with a great deal of interest to the able paper presented by Dr. Olmsted, and I feel that every measure we have at our command to elevate the medical profession and put it upon a basis above those lines of personal feeling and interest should be taken. Unfortunately, we notice that when expert testimony is being introduced in criminal cases, the experts upon each side seem to show a personal feeling in the testimony that they give, and are dogmatic without scientific cause. This is to be deplored. It is a well-known fact that the time for a general holiday is announced when the court introduces medical expert testimony. What should be done? I believe that the firm

and unanimous support of this State Medical Association should be enlisted, and without it we cannot accomplish anything.

At a recent meeting of the Medical Society of the State of New York a committee was appointed to report upon the most feasible plan by which present methods of introducing medical expert testimony can be improved, and they submitted the following:

Whereas, The present method of obtaining medical expert testimony tends to lessen the value of such testimony and to bring the medical profession into disrepute; therefore be it

Resolved, That the Medical Society of the State of New York would recommend the enactment of a law by the Legislature providing for the appointment of experts by the courts, and that only physicians of repute in the particular branch of medical science to which the question calling for expert opinion relates, shall be appointed; that the function of the experts so appointed shall be advisory, and the number thus appointed shall be such as to adequately represent the court and both sides of the question at issue, as in the judgment of the court shall seem necessary; that the experts so appointed shall have full and free access to all the evidence in the case, as well as access to the plaintiff or defendant in person as the case may be, if the issue involves his mental or physical state. That the expert shall submit to the court for transmission to the jury a report in writing, setting forth their conclusion and the facts in evidence on which such conclusion is based; that the cross-examination of such experts shall be limited to the facts and opinions embraced in their testimony as embodied in their reports, and that their compensation shall be fixed by the court at a rate that is reasonable for professional services of such a nature.

I would suggest, Mr. President, that a committee be appointed from this Association to draft certain resolutions, framing such a bill as may govern the introduction of expert testimony. I am at liberty to say that a leading lawyer in this State has promised to give his aid in drafting this bill, as well as assisting in passing it through the legislature. I now give notice that I shall present such a measure during this meeting.

Dr. Wm. H. Elliott, Savannah: I heartily indorse what Dr. Olmsted has said in reference to expert testimony. I have thought the subject over a great many years. I do not see but one remedy for its improvement, and that is the one Dr. Olmsted suggests: namely, that the experts should in these cases not be employed by the litigant, which induced a lawyer to ask me when I was giving expert testimony, "Were you employed *in behalf* of such a side?" And I could not say anything but "Yes, I was." The only proper way to get the expert is, as Dr. Olmsted says, as a friend of the court, to enlighten the lawyers and the jury, and he should not be there in behalf of anybody, but simply to explain the truth. And it is the business of the expert to go there and not to give the jury a lot of technical terms that they do not know what to do with when they get into the jury room. There is hardly a truth in medical science but what can be put into every-day English. Of course it requires greater skill to do this than to state it in technical terms, but I am sure it can be done. The English law takes care of that. The law of testimony before a coroner's jury distinctly states that the medical man shall put his testimony in ordinary English, or words to that effect. I do not remember the precise language of the law.

I wish to relate an incident which I have mentioned on a previous occasion before this Association. I read it before I was a doctor, and I never heard or read anything that gave me so much ease and comfort when lawyers were pulling me to pieces in different directions as this simple incident. A gentleman was testifying to the genuineness of his own signature, which was written several years ago. He swore it was his signature. The lawyer, anxious to break down his testimony, got up and said, "Colonel, you have sworn to the genuineness of your signature. Now, on your oath, *how do you know* that it is your signature?" "Well, sir," he replied, "on my oath I do not know *how* I

know it is my signature, but *I know it.*" The lawyer was going to give him another question when the judge stopped him and said: "Mr. Attorney, it is impossible for the human mind to analyze those processes by which it arrives at its ultimate conclusions, but they are none the less true for that."

Another little incident has often confronted me on the witness stand. In a certain case, the question arose as to whether a little boy was competent to give testimony or not. The lawyer on the reverse side of the case said to him, "Sonny, did your father talk to you about what you were to say to-day on the witness stand?" The boy replied, "Yes, sir." The lawyer said, "Will you please tell the gentlemen what your father said to you." "Well," he said, "my son, you get up and tell the truth and you need not be afraid of anybody."

Dr. Samuel Lloyd: Mr. President—I regret that business kept me on the platform while the paper was being read, and consequently I have not had the opportunity of listening to it, but I suppose, like most of you, I have fallen into the hands of lawyers, and I have been subjected to examinations and cross-examinations. I had the opportunity, however, a day or two ago of looking over some of the points in the doctor's paper, and it seems to me that throughout the whole United States, if not abroad, there is a decided lack of uniformity in the question of expert testimony. The question is a vital one with us in New York, one we have been discussing for a long time, and two or three attempts have been made to solve it, and the solution that has seemed the more likely to render good results was the selection of experts by the court, and that these experts be officials of the court, not representing either side of the case, and paid not by the defendant or plaintiff, but getting their fees directly from the county treasurer, being charged up as disbursements, etc., which is an important

part of the legal fees. But I have always felt when called upon to testify in court that there was a good deal of a farce about it. For instance, I was connected with a hospital a few years ago which was sued for damages, and we were called upon to secure experts. The other side who were suing employed their experts, and we employed ours, and in a perfectly straight case we had diametrically opposite expert testimony, as is usually the case. As the judge said in his decision, he thought there was nothing to do except to rule out the expert testimony, and the case had to go to the jury without the expert testimony because of the diametrically opposite testimony given by the two sides, and there was no way of settling the matter.

I was called as an expert in a case some time ago in which my only opponent was a professor in an eclectic medical college. He was selected on one side, and I on the other. The question was one of hernia. A small boy, who had had a congenital hernia on one side, had tripped over a small oilcloth in a tenement, had fallen down a flight of stairs, and shortly afterwards a hernia on the opposite side from the original one appeared. The contention was that the fall downstairs had produced the hernia, and a suit for $5,000 was entered against the landlord. I represented the defendant and my eclectic brother the plaintiff. The question of the capability of each of us to give expert testimony came up. It was my province to sit behind the lawyer who represented our side of the case. I am talking now of the inside history of experts. It shows how cases are worked up, and I suggested to our lawyer that he ask the gentleman who was giving testimony what an indirect inguinal hernia was, and he said it was one that came through the external ring. It took but a little while, by simply suggesting two more questions, to show that the gentleman did not know anything about the anatomy of the inguinal ring, and the expert on the opposite side of our case was flounder-

ing in deep water. It was suggested that I take the stand, his lawyer thinking that I might possibly get in like water, and again the expert testimony ruled that the boy was not able to take an anesthetic, and consequently could not be operated upon. My lawyer objected, and said why not operate? Counsel then asked, "Would you operate if he had heart trouble?" "Certainly." "You could not give him an anesthetic?" "Yes, I could." He said, "What would you give him?" I said I might give him ether; I might give him chloroform or something else. He replied that ether and chloroform were the only anesthetics, and my eclectic brother nodded his head and said, "We have caught him." I simply suggested that ice was a very nice anesthetic, or cocaine would do, or a little water thrown in around the sac would be all that is necessary. When they got the other gentleman to take the stand again, it proved that he had never used any anesthetics but chloroform and ether, and consequently his testimony was ruled out. The point I want to make is this, that here is a simple illustration of the kind of experts that we get in courts; that is the reason why expert testimony is of so little value and so considered by the counsel and by the judges in our courts, and it seems to me that the profession ought to take some steps to protect itself by insisting that only experts shall be called to give expert testimony, that is, men who have made a special study of the case in hand, and they shall be cognizant of the testimony that they will be called upon to give along the line of work. This cannot always be done. If, for instance, they called me in a case of insanity, I would know very little about it, and I would be just as badly mixed up almost as my colleague from the other school in the case I have related. Yet we find this constantly in our expert testimony. Improvement cannot be brought about as long as the financial element is the only one we have in view, that is, so long as a man is paid to give a definite line

of testimony, because we know perfectly well that medicine and surgery not being an exact science, it is always easy to find a theory that is different from the one our colleague holds. Until we can get it down to an exact science we will have more or less trouble. The method of employing experts as direct servants of the court, not representing either side, but free to give testimony on the medical aspect of the case without caring what effect it has on either side, and then having the testimony properly defended and protected and placing the expert at the disposal of both sides, should be adopted; and if the medical profession would recommend the election of a board of experts, coming from the State Society, as has been suggested, or that nominations be made by the medical colleges, if you please, and this board of recognized experts should be called to any county throughout the State, we might get rid of the reproach that now attaches to medical expert testimony; and I do not believe we will have this if it is left for the chicanery of the counsel and perhaps some member of the legalized practitioners of medicine, because we have legalized practitioners of medicine who are not capable of giving expert testimony. It makes no difference where they belong at all; they might be called in to act in collusion with the counsel. When we can get it down to the employment of a State Board, or to the selection of recognized experts and can eliminate this question, then we may expect to get rid of this unsatisfactory condition, but I do not believe we can until it is done.

Dr. DeSaussure Ford, Augusta: It has seemed to me, sir, for some time that the very fact that so much confusion exists in reference to expert testimony in our court-houses, that a revolution was almost obliged to be established, and hence society itself, the lawyers, judges of courts, and also physicians, have been alive to this question, and they have been seeking for a remedy. The author of the paper mentions that the New York State Medical Association has in-

troduced and adopted resolutions regarding this matter and I believe it was taken up by the Medico-Legal Society of New York, and that distinguished medico-legal man, Clark Bell, has almost exhausted the subject up to the present time. Only a week or ten days ago I had occasion to deliver a public address, and in it I stated that I thought the time was not far distant when the judge and jury would call upon some expert, or some medical man to assist them in getting the truth in certain cases, because the opprobrium has been very great because of this difference of opinion between physicians on the witness stand. We always differ more or less, but I think we differ possibly for the sake of differing in a court-house.

The paper to which we have listened here to-day is well timed, and if I am here when the question comes up for discussion, I do not think that I will indorse the plan of the Society taking any more notice of it than barely a recommendatory one, but that a law shall be provided whereby the judge in each circuit shall be able to determine, with the aid of the medical faculty of his district, who shall be selected by him in order to assist him in testimony, and in the case in its proper adjudication.

Dr. Westmoreland: There is such a law in this State now.

Dr. Ford (continuing): If so, I fancy it has not been enforced upon the line of my suggestion. This question has been thoroughly discussed in the Medico-Legal Society to which I have referred, and I believe they have gone to the New York legislature with some such resolution to try and get the passage of a law to prevent this difference of opinion on the part of medical experts, which, of course, is always confusing to justice and often resulting in unpleasant professional wrangling.

Dr. J. S. Todd, Atlanta: The necessity for some reform in medical expert testimony is just as apparent as it

is possible for it to be, and I am willing to indorse any position that looks to a change in the present methods. We want justice accomplished. We want to testify to the truth, but human kind is so constituted that if we have preconceived impressions, predilections and prejudices, we cannot see the truth, especially when there is a fee to blind us. Time and again lawyers have sent their clients to my office, who had railroad damage suits on hand, to be examined, and I always charged them for examination, then gave my opinion afterwards. In some instances I told them that they did not want me. If I thought a man was injured in an accident, of course I was summoned to testify, otherwise not. I do not think this is right. The judge ought to appoint the experts, and we ought to call their attention to the law. I will mention another instance which illustrates how badly the law operates and how little respect a jury has for experts. It is with reference to a celebrated case that we had in Atlanta. I am not a medical expert on insanity; I have always affirmed that I was not, but like the poor negro who was arrested for a supposed murder, when asked why he was arrested, he said, "I am sure I don't know, but I am certain I did not kill him." Before the lawyer got through with this unfortunate remark of his, the poor old darky said "I might have killed the man and forgot it." I testified three times in this case a little differently. The first time I said I didn't know whether the man was insane or not. The second time I swore I *thought* he was insane. The third time I swore absolutely that he was insane. There were two celebrated experts, one the superintendent of the insane asylum in Georgia, the other the superintendent of an insane asylum in North Carolina, who agreed with me. I was told by the jury that my testimony cleared the man. How? I testified that I was not an expert, but that I believed the man was insane and begged that before they con-

cluded as to whether the man was insane or not, that they take him out and talk to him themselves. And I was told by one of the jury that on first ballot the majority were for sanity, but that acting on my suggestion they brought the man before them and in twenty minutes returned a verdict of insanity, because of their examination and that medical testimony cut no figure in the result! Boils have been called the opprobrium of medicine; medical expert testimony is the opprobrium of medicine of to-day. It is degrading the profession; it is perverting truth, and some means should be taken by which justice can be had and the medical profession exonerated from the odium which at present surrounds so-called expert testimony.

Dr. George H. Noble, Atlanta: Doubtless it would take a great deal of experience and much time to satisfactorily settle this question, and I wish to add a little to the discussion by making a suggestion; namely, that some authoritative medical body in this State might make a list of men who were considered to be competent to testify in the different departments of medicine and surgery and recommend the same to the courts, which should appoint from this list two men who are acceptable both to the plaintiff and defendant.

The two appointees should select a third man which is acceptable to the court, and they, as a commission, should take the printed testimony, weed out all foreign matter, and return it to the court under oath. This commission should be paid by the court so as to avoid the liability of becoming biased in favor of one side or the other. It is to be presumed that the efficacy of such a system as this would depend upon the character of the men that were recommended.

Dr. Willis F. Westmoreland, Atlanta: The medical expert reminds me of the man who was in a doubtful state during the last election. He had been a democrat up to a

certain length of time, when he changed over and helped the State to go Republican. One of his friends said to him, "The Republicans are in office." "Yes." "Do you expect an office?" "Well," he said, "I am human." I think this illustrates expert testimony all the way through. We expect office and we get it in proportion to the side that wins, and we are all human.

Every one knows that these recommendations amount to nothing. They will have no influence when any of us get on the stand, and will have absolutely no effect on the testimony that is given. The testimony given in cases of insanity is always very peculiar.

George Francis Train, of New York, who is quite a noted character, was tried some years ago for insanity with reference to the disposition of his estate. Dr. Hammond, an expert in nervous diseases and well known to the profession, testified in regard to Mr. Train's mental condition. He represented the heirs, and said there was no question in regard to his insanity, but that there was no need of confining him. He said: "I do not think he is a man who would commit any crime." Mr. Train was a shrewd citizen, and the next morning, to get even with Dr. Hammond, he sat down and wrote him a note, saying that "according to your testimony and the findings of the court, if I were to meet you on the street to-morrow and shoot you through the heart no jury could do anything with me." Hammond read Mr. Train's letter, and it is said secured the services of two private detectives who followed him for about two years for fear that Mr. Train might carry out the recommendations of his letter. That is the position in regard to these cases. There was a little episode in Puck which said there were three kinds of liars—one was the doubtful liar, the other a damn liar and the third was the medical expert witness. This is practically true. So long as we try cases the way we do at present testimony will be given in the same way.

Every man is interested in any case he comes in contact with, not especially from a pecuniary standpoint, but the ego is so marked in every man that when he goes on the stand he will try to carry out his idea in regard to the particular case; I do not care whether he receives $5 or $500 for his testimony. The inconsistency of expert testimony which has been mentioned here to-day is true. Take the ordinary doctor on the stand and he makes a serious mistake in one regard. There are two classes of subjects upon which he is called upon to testify. He has to testify regarding the case which he has examined, then his testimony is direct; or he has to testify simply as an expert in regard to a hypothetical question entirely, not based upon this case. If he has not examined the case his testimony is hypothetical. If he has examined the case and takes the stand, his testimony in the direct examination is based on his conclusions in the case, and he says that the man has a fractured arm, for instance. He is honest, sincere and truthful in giving that testimony. The lawyer gets up and cross-examines him. The cross-examination is purely hypothetical. The lawyer will probably say to him, "So and so had such and such an injury—could you say that the arm was fractured?" The doctor says no. In the first place, the doctor testified in regard to the injury and said that the arm was fractured, but in the cross-examination he has not testified in regard to the particular case at all, but has answered a hypothetical question, which, unless the doctor is careful, is based upon that particular case. On cross-examination he says the arm was not fractured. The inconsistency of legal testimony arises largely from the manner in which questions are asked.

Some years ago, when I was on the witness stand, a lawyer on the opposite side said: "Dr. So-and-so has examined this case, has treated it, and comes here and testifies to so and so. Now, won't you have to acknowledge that any

physician who has been connected with a case and has treated it all the way through, has seen it every few days, is better qualified to testify in regard to it than you are?" What are you going to say? You are to answer in regard to a fellow physician, who may be a personal friend or an enemy, it does not make any difference which side he is on. He has had charge of the case from beginning to end. You have examined it once and the attorney asks you whether he is not better qualified to testify in regard to the case than you are. It is simply such questions as these that catch the average medical practitioner when he gets on the stand. You have said that this man has so and so, your opinion being based on one examination, and at the same time you testify, no matter who examined the case and had charge of it all the time, that he is much better qualified to give evidence in regard to the case than you are. My rule is never to answer any questions that are propounded by lawyers except they are based on direct cases. I have taken the stand and a lawyer has said to me, "Do you know Dr. So-and-so? He is a practitioner in good standing is he not?" I replied, "I am very sorry, but I am here to answer questions in regard to this case." The lawyer then said, "Do you know Dr. So-and-so?" I again replied, "I am very sorry I cannot answer your question. I cannot give any testimony in regard to any fellow practitioner and you cannot compel me to do so. I have got no friends, no enemies in this case, and you cannot force me to reply to your questions except they pertain to or are directly based on the examinations I have made. If I have not made it, you can ask any hypothetical question."

The doctors themselves are largely to blame. They get into this trouble simply from the fact that they do not learn how to say no when on the stand. Nine doctors out of ten want to answer every question. If they would learn to say "I know," and "I don't know," expert testimony would not be in the position that it is to-day.

A CASE OF CYSTOCELE COMPLICATING LABOR.

By V. D. LOCKHART, M.D., Maysville, Ga.

Gentlemen: I report this case for the reason that few such cases are recorded in our literature, and because I experienced something in this case which may be of interest to the general practitioner from a clinical point of view.

By the term cystocele complicating labor is meant a prolapse of the bladder into the vaginal passage during labor. A cut illustrating this condition is printed in the American System of Obstetrics, and is here reproduced.

Mrs. J. N., robust, blonde, aged thirty-six, mother of eight children, two of them deaf mutes. Was called to attend her in labor October 12, 1893. Had treated her for a troublesome cystitis after her previous confinement two years before. She was a subject of partially lacerated perineum. The tear had not been very extensive. All her labors had been slow and troublesome. I was away when the messenger came for me, and there was some delay in reaching her. Arrived at the house at 11 p.m. She had then been in labor four hours; pains very strong and expulsive but, to use her own expression, they "seemed to do no good." She was lying on her back, straining with all her might, and I suspicioned at once that something must be wrong.

Made hasty examination and found a large, rounded tumor presenting at the vulva, which, in my haste, I took for a shoulder, and at once prepared myself to do a version. The patient was laid across a firm mattress, and after thor-

oughly cleansing my arms with an antiseptic solution, proceeded to make a more thorough examination, when, to my surprise, I found, instead of a shoulder, as at first suspected, a firm, rounded tumor, thoroughly blocking the birth-canal, arising from the symphysis pubis and the inner wall of the

pelvis. The tumor was very firm, and immovable in any direction, and at each recurrence of the pain became still firmer and protruded from the vulva.

The immense size of the tumor, extending entirely across the vagina, and impinging on the perineum in the opposite direction, made it extremely difficult to reach the uterus, but by much patience, and persistent effort, I succeeded in

introducing my hand into the vagina, posterior to the tumor, and could then make out the presenting vertex and the partially dilated uterus with the bag of water above the pelvic brim.

The os was dilated to the size of a silver dollar, membranes intact. For nearly a half hour my hand remained in this position, watching the effect of the pains, and trying to make out the nature of the tumor, and, more especially to find some way out of the difficulty. I could only see one way at that time and that a Cæsarean section, as I supposed it to be a fibroid, or fibro-cystic tumor of large size, but in this I was very much mistaken, as the sequel shows.

I notified the husband of the serious condition of the patient and dispatched a messenger for Dr. L. G. Hardman, of Harmony Grove, fourteen miles away. The messenger left at 3 o'clock a.m., and I lay down to get a little sleep, but the intense suffering and groaning of the woman in the adjoining room prevented, and I soon arose and was at the side of my patient to render what little aid my sympathy and encouragement could give, if nothing more.

At 4 o'clock she was attacked with a severe rigor, lasting over ten minutes, to be followed by another and another; during this time she became cold to her knees. I administered a hypodermic of morphine and wrapped her limbs in warm blankets. As soon as she became warm and reaction of the circulation took place, the pains rapidly increased in force and frequency. I have never witnessed such intense suffering in labor. She seemed to throw all the force of her vigorous muscular strength into a supreme effort to overcome the obstruction and expel the child. At every effort she looked a mute appeal at me for help, and occasionally in the climax of acute physical suffering screamed aloud for something to be done. I essayed to give chloroform, but this she pushed aside and refused.

At this point I again introduced my left hand, and found that the head had become pressed firmly down in contact with the tumor, while the tumor itself was still more firm and more protruded. The uterus was now dilated to the size of my palm, soft and dilatable. It occurred to me that I might accomplish something by direct pressure upon the tumor; that I could perhaps succeed in reducing its size or push it a little out of the way. After one hour of pressure in this manner, I found that the tumor was some smaller, and that the powerful pressure of the pains was molding the fetal head into a wedge-shape corresponding to the opening between the pelvic wall and the tumor. During the next half hour I found that the woman's strength was failing quite fast; the pains were not so strong and I noticed that the tumor had an inclination to rise above the pelvic brim when pressed upon between the pains, and I finally succeeded in pushing it above and out of the way, or, in other words, I reduced the bladder, although I must confess that I did not know exactly what I had done, not having recognized the true nature of the obstruction, which was, in fact, an enormously enlarged bladder with thickened walls, prolapsed in front of the fetus. I had introduced a catheter and drawn off the woman's water and made a thorough examination, as I thought, but the thickening and induration of the walls of the organ deceived me as to the true nature of the obstruction.

Had the strength of the woman held out she would have now gone through all right, but when the head reached the perineum her strength utterly failed, and was obliged to apply forceps and deliver. I had no difficulty in doing this, but the child was still-born on account of the long-continued and powerful pressure to which it had been subjected. Her recovery was slow and painful, in fact she did not recover entirely from the chronic inflammation of the bladder, but she became pregnant again and I delivered her of

another robust and healthy infant two years and a half afterward.

Her last labor, like all her previous ones, was slow and lingering, but she passed through it without complication or mishap, but after her labor she was again attacked with a severe and troublesome cystitis. Upon examination, three days after the birth of the last child, I found the posterior wall of the bladder prolapsed into the vagina. I washed out the bladder with an antiseptic solution, likewise the vagina; applied a tampon to hold up the bladder, removing it once daily, and gave benzoate of ammonia, 20 grains, thrice daily. Also gave some other diuretics, purgatives, etc., for something more than one week's time.

Her improvement was steady and satisfactory until she was able to be up and about once more, when the patient discontinued the treatment, as she lived some distance away in the country and in a rather inaccessible place.

The causes which bring about this condition are mentioned by Coulson in his work on diseases of the bladder. He says: "The bladder descends behind the pubis into the vagina forming a tumor. Relaxation of the walls of the vagina affords a predisposing cause, joined to which any unnatural pressure on the bladder may force it downward and inward on the vagina, where the least support is afforded. Hence, the complaint is often the result of difficult and protracted labors, especially when the urine has been allowed to accumulate, and the displacement is particularly liable to occur in cases where the support which should be afforded by the pelvic floor has been lost through laceration of the perineum. It has occasioned the greatest embarrassment during delivery, impeding the passage of the head or misleading the accoucheur." A case is mentioned by Dr. Hamilton in which the prolapsed bladder was mistaken for the membranes and punctured; and Dr. Merriman records one in which a distended bladder, pushed be-

fore the head of the child during labor, was actually opened, under the mistaken notion that it was a case of hydrocephalus.

DISCUSSION ON DR. LOCKHART'S PAPER.

Dr. C. H. Richardson, Montezuma: If I understood the doctor correctly, he emptied the bladder before he undertook these manipulations.

Dr. Lockhart: You are right.

Dr. Richardson: I cannot see why the doctor had that difficulty if the bladder was empty; why the tumor was large and why it should obstruct labor in that way. The bladder wall itself may be dense and hard, but I cannot see how an empty bladder can obstruct labor, and I would be glad to have the doctor explain this point.

Dr. T. M. Greenwood, Mineral Bluff: I have had a similar experience to the one reported by the doctor, but not so much trouble. I had a small tumor complicating labor. I passed the catheter and readily came to the conclusion it was the bladder. I first passed a female catheter and withdrew some urine, and then introduced the male catheter which is more curved, turned the woman about and drew off considerable more urine. After I thought I had withdrawn it all, the walls of the bladder immediately collapsed and there was no trouble in pushing them back; then keeping my fingers against them as the pains would come on until the head of the child passed below the bladder, I had no further trouble. At one time the tumor was something like a teacup in size.

Dr. J. D. Chason, Iron City: In some of these cases, in addition to having a vesicocele we have prolapse of the vaginal walls, which I expect Dr. Lockhart had in his case. I have no doubt but that he had a prolapse of the vaginal walls, as he states there was a partial laceration of the perineum. I have seen this, and with the amount of tissue there prolapse of the vaginal walls gives rise to this trouble.

Emptying the bladder does not relieve the condition, nor does pressure alone, but pressure will afford some relief. The labor is tedious on account of the redundant tissue that still causes the trouble and rolls in front of the pressing head.

Dr. H. F. Scott, Atlanta: I think in the doctor's case, when he attempted to withdraw the urine, he did not use a long enough catheter, and it made it difficult to entirely remove it with the patient on the back. The principal trouble with the doctor's case was his failure to use an anesthetic when the patient was having severe and expulsive pains. If he had had chloroform or ether with him and had given it to a sufficient extent, then by suitable pressure I am satisfied he would have removed the trouble at once without any further difficulty.

Dr. R. R. Kime, Atlanta: The case of cystocele related by the doctor is one of considerable interest with reference to enlargements or accumulations in the pelvic cavity. One important point in the treatment of these cases is the posture of patient. It is essential first and always to empty the bladder, but after the bladder is thoroughly emptied, if we have prolapse of the vaginal walls or a cystocele, or a cystic accumulation, or in some cases where we have a fibroid tumor in the pelvic cavity, by putting the patient in the exaggerated Sims position and elevating the hips until the bowels and pelvic contents gravitate forward, we not only lift the redundant tissue out of the pelvic cavity, but we relieve those cases of incomplete labor without operative interference, so that labor will be completed naturally by the unaided efforts of nature itself; in other words, without instrumental interference. At the same time, if we place the patient in the exaggerated Sims position, or in some cases in the knee-chest position, while making firm and gradual pressure on the growth in the pelvic cavity, we will be surprised to see it disappear above the brim of the pelvis, the child come down into the cavity and be delivered.

Not long since I took charge of a case of labor for a physician who was taken sick and could not attend the woman. In making an examination I found an enlargement which seemed to almost fill the pelvic cavity. It was in the posterior part of pelvis filling the hollow of the sacrum and extended farther up. The woman was placed in the exaggerated Sims position, and in less than fifteen minutes thereafter the child was delivered.

Dr. Lockhart (closing the discussion): In reporting this case I have honestly tried to confess my fault and failure in diagnostic skill; but, as you will observe in the closing lines of my paper, I am not the first to make the same mistake, and it is because of such mistakes that the paper was presented. It is true that I did not recognize the true nature of the trouble, but I think we ought to be as willing to record our failures as our successes, for the benefit of others who may have similar clinical experience at any time.

There is one point that I wish to mention as the cause of these troubles. It is laceration of the perineum. The prolapse commences with a loss of that firm support which the perineum would afford if not torn. The bladder being in a state of chronic inflammation, with the vagina also in a relaxed condition, gradually yields to the weight above, with the result mentioned.

In my case the bladder had been inflamed for a long time without appropriate treatment, resulting in great thickening of its walls. In fact, I do not think that some of the members who have discussed my paper realize to what an enormous extent such thickening may extend in some cases. I had carefully emptied the bladder of its contents with a flexible catheter, but the trouble was not on account of accumulation of urine, but to enormous thickening of the bladder walls, which had rolled down in front of the descending head, presenting a formidable tumor, increasing in size and firmness with each return of pain.

ATYPICAL CONTINUED FEVER.

By EVERARD HAMILTON RICHARDSON, M.D., Atlanta, Ga.

Marked progress is being made, and rapid revolutions are occurring, in both the art and science of medicine. Well equipped pathologists, with the requisite technical information and the microscope in the field of histology and bacteriology are diffusing new light, especially upon histology and the etiology of disease. And this knowledge disseminated by the medical profession is being utilized for the abridgment of human suffering, by the prevention of disease and the promotion of the happiness and longevity of the human family. The mission of preventive medicine is godlike, and has received renewed impetus during the last quarter of the nineteenth century. The knowledge of its achievements in the past, and a forecast of its future possibilities, stamps her true devotees with some of the qualities of divinity.

Upon the threshold of this investigation of atypical continued fever, a definition of the regular typical form of the disease is obviously necessary, and before entering upon the consideration of the anomalous form of continued fever it is proper for me to state that typhus fever, catarrhal, eruptive, inflammatory or septic fevers will not be discussed in this article.

The subject of fever is perhaps the largest in the whole realm of medicine, and it is one of vast concern to mankind.

For the first intelligent and comprehensive study of idiopathic essential continued fever we are indebted to Louis of France. In 1829 Louis gave the name "typhoid" to

continued fever. Up to this period typhus and typhoid fever were regarded as identical. The occurrence of the intestinal lesions of the latter disease was considered an accidental complication of typhus fever. Autopsies made during the seventeenth century revealed the intestinal lesions of typhoid fever, but it was reserved for the nineteenth century to appreciate their real significance, and to differentiate it from other forms of fevers. Gerhard of Philadelphia, a student of Louis, shortly afterwards demonstrated the difference between typhus and typhoid fever. This important knowledge, first discovered by Gerhard, was widely disseminated in America before it was recognized in Europe or Great Britain. Modern research in bacteriology has made the study of the etiology and pathology of typhoid fever one of great interest to the student of medicine.

The disease had long been known as a "filth disease," but in 1884 Eberth demonstrated that the direct cause of it was a specific micro-organism, now known as the bacillus of Eberth. The testimony is, I think, indisputable that it is unlike the malarial germ, which is in all probability an air-borne disease, but is water-borne, infecting the human organism through polluted water, milk, raw oysters and vegetables or contaminated food. Professors Conn and Broadbent have proven beyond cavil the absolute certainty of raw oysters having infected the inmates of colleges with typhoid fever. The specific micro-organism is conveyed *per orem*, infecting the organism through the lymphatic system, generating toxins which act as a powerful sedative to the nerve centers, and which has an elective affinity for the mucous membrane of the *primæ viæ*, producing congestion, infiltration and effusion of Peyer's glands of the ileum, and often leading to ulceration and hemorrhage from these surfaces. Thus we observe it is not the bacilli that produce the local and constitutional disturbance inci-

dent to typhoid fever but their toxins or ptomaines. Heat destroys the typhoid germ, though it exhibits great tenacity to life.

Sultan in 1894 published the history of a case of chronic osteomyelitis of the clavicle supervening upon typhoid fever, where the bacilli were found in the pus and cultivated six years after the recovery from typhoid fever.

The bacilli of typhoid fever have been found in the tissues of new-born infants, but owing to the close resemblance of the typhoid and colon bacilli, this does not demonstrate the intra-uterine infection of the infant from the mother suffering from typhoid fever, though the enlargements of the spleen and liver that have been observed in these cases justify the belief in the possibility of the fetus being thus infected from the mother.

The onset, duration and general type of the disease we shall undertake to make manifest is not by any means always constant or uniform in its course.

The disease is eminently a preventable one. European cities, by enforcement of proper sanitation, drainage and cremation, have almost stamped out the disease from their large centers of population, but our records demonstrate that American cities are far in the rear of Europe in sanitary laws for the prevention of the disease.

Dr. Osler's statistics show that in 1895 two thousand and five hundred cases occurred in Baltimore, while it is the consentient opinion of all medical men in this country that the malady has increased in our rural districts. Its prevalence in the country and many interior towns is appalling, and is due solely to the failure of enforcing intelligent sanitary laws.

The established typical cases, with the *prodromata*, pain in head, great prostration of the nervous system, nose-bleed, gradual rise of temperature, slight pain and gurgling in the right iliac region of the abdomen, enlargement

of spleen, rose-colored rash, tympanitis, offensive ochre-colored discharges from the bowels, delirium, diarrhea, and lasting from four to six weeks, require no large amount of discrimination or medical acumen to recognize. A venerated medical authority, writing on the disease, avers: "As far back as our knowledge of the disease goes typhoid fever presents the same picture." No statement could hardly be further from the truth. I think it is unquestionably true that enlarged experience teaches us that the clinical history of the disease varies widely in its symptoms, type and duration. Osler declares, "enteric fever presents no constant picture; on the contrary scarcely any disease has a more varied symptomatology. The fever may be said to be invariable, though afebrile cases are not unknown; but in the features of onset, in the length of its course, in the presence or absence of symptoms regarded as cardinal, such as rose spots, diarrhea, etc., typhoid fever is so uncertain that the diagnosis is often dubious."

The object of this paper is to consider the atypical, irregular or anomalous type of fever, differing in severity and course, but regarded by the writer as typhoid or enteric fever. In recent years the readers of current medical literature have observed the almost unanimity of opinion advanced with reference to the change and modification in type of typhoid fever. The harmonious, stereotyped picture, with the classic symptoms of the old authors, has been radically changed. In very many cases of the disease we no longer have the great prostration of the nerve centers; tympanitis, that prominent symptom in the old form of the disease, is absent. Instead we have often a retracted belly and no rose rash. The premonitory symptoms are modified in intensity and duration. There exists no splenic enlargement, no diarrhea, no delirium. The temperature has the usual evening rise and morning remission, as in ordinary cases of typhoid fever. The evening temperature

by the fourth day may reach 104 degrees F.; should the temperature reach 104 degrees F. earlier, it would indicate a coexisting malarial element, which paroxysmal complication the alkaloids of cinchona would eliminate. As an interne of Guy's Hospital, London, in 1890, my opportunities for careful observation of the fever cases there convinced me that hyperpyrexia was an unusual symptom in any form of typhoid fever. In all the cases of typhoid fever admitted into the wards of this great hospital between the years 1879 to 1893, inclusive, hyperpyrexia was noted in only one per cent. of the cases.

In this type of fever pain in the head is usually a prominent symptom. Slight pain with gurgling in the right iliac region may be detected by the *tactus eruditus*. It is worthy of emphasis that the extreme prostration with obtunded sensibilities, so conspicuous in the regular form of typhoid fever, is absent. But the marked difference between the types of the disease is the shorter duration and the great modification of all the symptoms in the atypical form. And this difference in duration is uninfluenced by treatment.

Often the patient visits the office of the physician with the story that he has not been well for a week or longer, does not feel able to attend to business nor sufficiently ill to go to bed; the prominent symptoms are pain in the head, fever, which increases in the evening, lassitude and anorexia. On taking the temperature you find it 102 degrees F. Tell this patient you fear his attack will develop into one of continued fever, and in his interest advise confinement to the bed and the observation of a physician, and your wisdom may be questioned. Your advice is, however, observed and you administer large doses of quinine for two or three nights, which, while he is under its influence, lowers the temperature, possibly upsets the stomach and disturbs the nervous system, but does not interrupt the

course or progress of the disease. Confine the subject to bed, give purgative dose of calomel, and apply cold water to body sufficiently often to keep temperature under 102 degrees F. Enjoin a fluid diet, administer some of the bromides or opium to relieve pain and produce sleep if required, employ enemas to move bowels once daily, and with an abundance of fresh air and perfect quietude, in from ten to sixteen days the fever disappears. The disease has terminated spontaneously.

The clinical history of this class of cases shows that they terminate naturally in from ten to sixteen days regardless of the treatment instituted, leaving the subjects with little or no prostration, but just as liable to relapses as the ordinary cases of typhoid fever. The evening temperature of this class of cases may never exceed 103 degrees or 104 degrees F. Respiration is never much above normal, and the pulse ranges from ninety to one hundred and twenty beats per minute. Indeed it may be difficult to keep the patient in bed.

In my case book I have the record of a subject of this type of fever treated by this method whose temperature was normal on the eleventh day. The patient insisted on getting up, and remained clear of fever several days, but relapsed and when I again visited her found the evening temperature 102 degrees F. and pulse 108.

In three days without quinine, purgation or an antipyretic she was again free from fever and remained so. Nothing but a placebo was given at this time. She convalesced rapidly without a second relapse.

I think this is the type of fever claimed by some intelligent physicians in recent years to be possible always to abort by rendering the alimentary canal and blood of the subject clean and aseptic.

Another case from my records more forcibly showing the identity of the two forms of fever under consideration

is that of Mr. A., of Atlanta, white, aged twenty-five years. He visited my office June 8, 1892, for treatment, complaining of pain in the head and general lassitude. His temperature was 101 degrees F., pulse 96 beats per minute, respiration normal. Acting upon my advice he returned to his home, and I there saw him on June 9th, 10th, 11th and 14th. During each of the nights of the 8th, 9th and 10th he took twenty grains of quinine divided into four doses, which had no effect in interrupting the progress of the fever. On the evening of the 14th, for the first time, he was free from fever and remained so. The evening temperature of this patient at no time reached a higher point than 103 degrees F. Close inquiry elicited the fact that in no event was it possible that this gentleman had had fever longer than three days prior to his first visit to me upon June 8th, proving that his fever terminated spontaneously in ten days. The administration of quinine had no effect upon its course. He complained of nothing during his illness but pain in head, loss of appetite and inability to sleep. During the attack he took only one purge, a dose of calomel when he first came under observation. Living in a comparatively isolated portion of the city of Atlanta, and using only well-water, his young wife, six months pregnant, at the same time developed a case of fever, which proved to be a typical case of typhoid fever. During the attack she had two copious hemorrhages from the bowels. Shortly after the end of the second week of the disease she miscarried, and one week later she died from exhaustion. This case, contracted no doubt from the same source, the polluted well-water from which the husband was infected, presented from its inception all the symptoms of typical typhoid fever. I have no question but that an autopsy would have shown the characteristic intestinal lesions incident to the latter stages of typhoid fever.

The clinical history—as yet the strongest known testi-

mony—and termination of these two cases, one a typical, the other an atypical case of typhoid fever, occurring together in the same family and location, and originating from precisely the same source, demonstrate as conclusively as human logic possibly can do the identity of the two cases, yet essentially different in type.

Some years since it was my fortune to treat during an endemic of typhoid fever a case of continued fever where it was necessary for me to remain by the bedside of the patient during the entire attack. The renowned surgeon and discriminating physician, the late Dr. W. F. Westmoreland, and Dr. J. B. S. Holmes, both saw the patient with me and confirmed the diagnosis of typhoid fever. I am absolutely sure that this patient had no fever nor rise of temperature after the thirteenth day, the disease having terminated spontaneously at this date.

But why this wide difference in severity and duration between the two types of the disease? It is fair to conclude that the etiology of the two forms of the disease is the same.

In the cases of typhoid fever where we never have fever after the tenth day, Caley gives a most specious explanation of the wide divergence in the duration of different cases of typhoid fever. His theory is that in typhoid fever we have two forms of fever to deal with—a primary—due to the infection of the human organism by the typhoid bacilli; and a secondary or septic fever, caused by ulceration and gangrene of the glands of the intestines. The characteristic pathological lesions of typhoid fever, namely, ulceration of the solitary and agminated glands of Peyer in the ileum and often extending to the solitary glands of the large intestine, we know are never present except during the later stages of the disease. The explanation is plausible, and is in harmony with our present knowledge of the etiology and pathology of the disease, and I believe is correct.

In the cases where convalescence is established in ten days we are warranted in concluding that the stages of ulceration and gangrene are never reached in the intestinal glands, never passing beyond the stage of congestion or engorgement, but terminating in resolution. These subjects appear not to have imbibed a big dose of the typhoid germs; or, owing to the beneficent influences of heredity and environment, they possessed more of that subtle principle denominated vigor or stamina, which prevented them from furnishing a favorable soil for the existence of the typhoid bacilli or the propagation of toxins in their organisms.

Behring, perhaps, has given us the true rationale of the resistive forces of the human organism against the attacks of disease—which is, that we are protected from the invasion of germs through the blood, the serum of which contains substances, the alexins of Buchner, which are antagonistic to micro-organisms. The poisons produced in the blood by bacilli are also destroyed by constituents of the blood—Nature's antitoxins.

The only pathognomonic lesion of typhoid fever is ulceration of Peyer's glands, and the solitary follicles of the lower portion of the small intestine, and these ulcerations never occur before the second week of the disease. There is no case on record where ulcerations were formed before the end of the first week of the disease. My own opinion from personal observation and experience concerning the relative frequency of the two types of typhoid fever is that the atypical form is the most frequent variety of the disease. And 'tis not difficult to obtain cumulative testimony from the most eminent sources to support this view of the subject. Bernheim, of France, states that the normal type of enteric fever is not the most prevalent form of the disease, but the abortive form should be placed alongside of it. In the latter form, he says: "The microbic evolu-

tion is aborted and the lesions in Peyer's patches resolve without ulceration."

The differentiation with the microscope of the typhoid bacilli from the malarial bacilli, making it possible to form a correct diagnosis at once, without the necessity of using the quinine test, or remaining in doubt, would mark a divine era in the history of medicine.

The recognition of the bacillus of malaria in the blood in 1880 by Laveran was a distinct advance in medicine.

Since the era of Eberth in 1884, demonstrating that the cause of typhoid fever was a specific bacillus, students of bacteriology have endeavored to make an early diagnosis by the recognition of the bacillus in the contents of the intestine, but an insuperable objection to this method is the fact that the typhoid bacilli cannot be distinguished from the *bacterium coli commune*, which exists in every alimentary canal, both in a state of health and disease. Another obstacle is that the typhoid bacillus is often absent from the alimentary canal, having been destroyed as shown by Sanarelli by the *bacillus coli commune*, which acts as a phagocyte, destroying every micro-organism in the alimentary canal.

In 1895, Zinn, commenting upon the cases of typhoid fever that had occurred at Nuremberg, says: "Regarding the bacteriologic diagnosis during the last two years, careful examinations have been made of the dejections, but with very few satisfactory results."

The Widal reaction from blood serum recently announced was thought could be utilized in diagnosing typhoid fever during the first week of the disease. It is based upon the action of the serum of the blood from subjects who have, or have had, the disease with a bouillon culture of the bacillus of typhoid fever.

The bacilli become clumped and fall to the bottom of the tube. But Dr. E. A. Elsberg, a capable pathologist

of Mount Sinai Hospital, New York, March 22, 1897, made the statement before the Medical Society of the county of New York, on serum diagnosis of typhoid fever or Widal's reaction, that "of the typhoid cases, the reaction was present the first week of the disease in only eight per cent., but in eighty-six per cent. it was present within two weeks." Upon the same occasion Dr. W. H. Park said: "In some instances it was absent the third week."

On April 10, 1897, in the *Medical Record*, Dr. Elsberg declares that "in one case in which the diagnosis, though at first doubtful, was later considered to be biliary calculi, we obtained a positive reaction." Further he asserts: "The reaction can in no sense be considered an absolute diagnostic method early in the disease. The absence of the reaction does not prove that the patient is not suffering from that disease."

Quite recently, February of the present year (1897), Dr. Osler, of Johns Hopkins Hospital, stated before the Medical Society of the County of New York, on the differentiation of malarial from typhoid fever by means of the microscope: "It was not easy to obtain a correct knowledge of the forms of the malarial parasite with the microscope." In the examination of the blood with the microscope in cases of mixed infection, the task is more difficult. Usually, he says, "the diagnosis could be made clinically by the tenth day, and one might not find any evidence of malaria in the blood before the end of a week, while Widal's reaction in typhoid was rarely elicited before the sixth or seventh day. If there was doubt, quinine would clear it up."

Thus we have presented the *crême de la crême* from the most advanced thinkers on the feasibility of making an early differential diagnosis between typhoid and malarial fever, with the information furnished by the bacteriologist. And the futility of relying upon blood examina-

tions by the microscopist to make an early and positive diagnosis in either typhoid or malarial fever is patent.

At the close of the nineteenth century, flooded with the light that science has thrown upon the most enlightened period of the world's history, we are forced to the conclusion that in making an early diagnosis of typhoid and malarial fevers, and in differentiating the one from the other, the administration of quinine is to-day the speediest and most infallible method for the accomplishment of this purpose. The administration of large doses of quinine for three consecutive nights will always eliminate the question of malaria. If the fever continues and does not depend upon inflammatory, septic, or other discernible cause, it is safe to diagnose typhoid fever. This, I assert, is a safe and reliable working rule, and enables us to make a positive diagnosis in three days instead of waiting until the end of one week or ten days, as now advised by those who rely on bacteriological investigations.

Mr. President, the annals of American surgery are emblazoned with the resplendent light shed by the immortal achievements of that trio of pioneer surgeons, Ephraim McDowell, Robert Battey and J. Marion Sims, who sprang from the loins of our fair Southland. They were born under southern skies, and received their inspiration from the rural districts, where the tuneful mocking-bird sings and the sunbeams play upon crystal waters. Thank Heaven for the unction that, while the dust of McDowell and Battey sleep in the land where the winds from the sweet South blow, and the perfume of the rose and violets of Greenwood emit their fragrance o'er the tomb of Sims, their spirits have met "on Fame's eternal camping ground" beyond the stars! To us is left the inspiring reflection that in the galaxy of the world's most renowned surgeons and benefactors, no names shine with the same deathless luster and splendor as theirs!

And in the domain of medicine proper, it is of interest to know that more than half a century ago a Georgian, Dr. L. D. Ford, LL.D., one of the founders and the first president of this Association, was the first to discover and promulgate, through the *Southern Medical and Surgical Journal*, the abortive treatment of all forms of malarial fevers by large doses of quinine. Cotemporaneously with the publication of the discovery of the abortive treatment of malarial fevers in November, 1836, by Professor Ford, his coworker Dr. L. A. Dugas, LL.D., taught and placed on record that the essential element of all forms of malarial fever was *periodicity*, and that when quinine in large doses was administered a second paroxysm never occurred.

The progress and scientific investigations of more than fifty years have not contradicted this testimony of that great medical philosopher, Dr. L. A. Dugas. Under our Republican form of government, we could not confer upon these names the insignia of the peerage, as the British government has recently so worthily bestowed upon Lord Lister; yet the knowledge that these men, our own countrymen, have so signalized their lives by producing epochs in the history of medicine and surgery—which time can never efface—is a legacy more to be prized than royal titles or monuments of brass!

The enthusiast in therapy would believe that treatment had jugulated the class of cases under consideration, losing sight of the natural history of the disease.

The scheme to abort every case of typhoid fever with a treatment based upon the assumption that it is possible by purgation and the introduction of antiseptics and germicides into the alimentary canal, internal viscera and the circulating blood in sufficient quantity to destroy the bacilli and their toxins that produce the disease, is irrational and untenable.

It is important for us to remember that there are about

seventeen pounds of blood in the average human subject to disinfect. We must also consider that the alimentary canal is a colossal organ, the length of which is about thirty feet, and in its largest portion has a diameter of twelve inches. While its chief function is that of digestion, it is also the great excretory organ of the body. One-fifth of its length is a common receptacle for the excrements of the animal economy, the sole province of which is to subserve the purpose of a sewer to eliminate the waste material from the organism.

We can accept the teachings of Oppler and other bacteriologists that the stomach and bowels are never free from micro-organisms. Indeed, it does not seem that our Maker designed that this canal should be rendered sweet and aseptic, and I regard it a physical impossibility to accomplish this without destroying its functions.

But without going further into the details of this treatment, I unhesitatingly declare the doctrine to abort every case of typhoid fever by the methods proposed, having subjects visit the physician in his office and placing no restriction upon diet, is chimerical, fallacious and pernicious.

DISCUSSION ON DR. RICHARDSON'S PAPER.

Dr. DeSaussure Ford, of Augusta, was called upon to open the discussion. He said:

Mr. President—I have only just come in, and have only heard a portion of the doctor's paper. I can say, that I have seen such cases as the doctor describes, and have had just the same experience as he has had. More recently positive diagnoses have been made by bacteriological examinations of the blood of typhoid fever patients to determine whether it is typhoid or not. These atypical and typical cases of fever we are all acquainted with. In one of his cases Dr. Richardson said, and it was an atypical case, that for the first twenty-four or forty-eight hours he gave qui-

nine, and his opinion was that within five or six days relief was very positive, although he does not give credit for the possibility of the medicine bringing about that result, quinine being both antiseptic and antipyretic.

Dr. R. R. Kime, Atlanta: It might be of interest in the line of obstetrical work to report a case I had some time ago. The patient was taken with typhoid fever at her confinement. The course of the fever was scarcely that of typical typhoid, but in the main this was so. At the end of the second week there were evidences of some uterine disturbance in connection with the typhoid condition, and I deemed it necessary to investigate the cavity of the uterus, the patient having had increased hemorrhage. It is my rule in those cases where we have evidence of uterine disturbance to investigate the uterine cavity and find out what the difficulty is. In this case I held the cervix open and irrigated with water. Understand, three days previously there was an increased flow amounting to a hemorrhage almost. As soon as I commenced to wash out the uterus the hemorrhage began. Before I tamponed the uterus the patient had almost become pulseless. The tampon was left in forty-eight hours. I might say here that Dr. Hardon was called in consultation and agreed with me that the case was one of typhoid fever with hemorrhage from the uterus. On removing the tampon at the end of the time mentioned, a stream of hemorrhage the size of a lead pencil began to issue again. We simply retamponed the uterus with iodoform gauze which was allowed to remain for thirty-six to forty-eight hours. In renewing it, the patient became pulseless again, and the indications were that she would almost die before we succeeded in retamponing the uterus. The tamponing of the uterus had to be repeated and kept up for three weeks before finally removing the last tampon to prevent the patient from bleeding to death.

Dr. Richardson (closing the discussion): There is very little for me to say in my closing remarks, as I have nothing to refute. I was not permitted to complete the read-

ing of my paper, and therefore could not bring out the culminating facts of my thesis, namely: That these cases terminated spontaneously, regardless of treatment. The other point I wished to make was that the administration of quinine to differentiate malarial from typhoid fever was better than any revelations of the microscope. A third point was the impossibility of rendering thirty feet of the *primæ viæ* and seventeen pounds of blood and internal viscera aseptic by the administration of any known medicine. Those were the points I desired to emphasize.

MEDDLESOME INSTRUMENTATION IN URETHRAL DISEASES.

By W. L. CHAMPION, M.D., Atlanta, Ga.

The ugly train of symptoms that follow in the wake of bad urethral surgery, and the results obtained from such instrumentation, is frequently a monument as lasting to the surgeon as a fracture improperly treated. It seems the impression is prevalent in the minds of some, that the urethra has no function at all, but was made for the surgeon's use to demonstrate his skill in the use of instruments.

Considering the teachings of to-day and our knowledge of the importance of cleanliness in surgery, it is a puzzle to know why physicians continue to thrust dirty instruments, made sleek with rancid grease, into the urethra and bladder, producing untoward results and not knowing the source of infection. If the instruments are clean, it frequently happens that they are passed into the bladder, carrying purulent material retained within the urethra. While a diseased urethra is as a rule an unclean canal, it frequently happens that the deep urethra and bladder are in a healthy state, so there is no common sense in "adding fuel to the fire" by using unclean instruments or forcing poisonous material into uninfected areas.

The close observer rarely overlooks the origin of urethral fever, swelled testicle, cystitis, prostatitis, damaged kidneys and many serious conditions directly due to the meddlesome use of instruments. Not to be a meddler in the treatment of genito-urinary diseases, it is essential to

be familiar with the use of instruments; to know when to use them, and what kind of instruments to use.

The use of small steel instruments, below 18 or 20 French cannot be too strongly condemned. With our knowledge of the anatomy of the urethra, and of the dangers of passing small steel instruments, false passages should be a thing of the past. The soft bougies, though not as durable as the steel sounds, accomplish the same results, and should always be used when a small instrument is called for; and even the larger ones are just as serviceable and produce less pain on introduction.

The routine practice of passing sounds *into the bladder* in treating strictures in the penile portion of the urethra, is not only useless but bad surgery. There is always a liability of infecting the bladder, and producing irritation of the prostatic urethra. The short, straight sound passed through the stricture accomplishes the same result as the curved instrument, and the danger of producing complications is lessened.

An important point that should never be overlooked, is the necessity of having instruments perfectly clean that are to be introduced into the bladders of old men with enlarged prostate; and this point should always be impressed upon the patient when he is given a catheter to use.

The carelessness with which instruments are thrust into the urethra frequently results in permanent injury to the tissues. "It is a very easy thing to force a catheter or sound through the urethral walls, or to produce sufficient injury by bruising and laceration to result in cicatricial deposit and consequent stricture." This is especially true when the canal is highly inflamed; and probably many of you have had cases of cystitis, and later organic stricture to treat due to meddlesome surgery of this kind.

The custom of many physicians of using the steel sound for exploring the urethra, to determine whether stricture

is present or not, should be abandoned. The sound is practically worthless as an instrument to arrive at any knowledge as to the condition of the urethra. Patients frequently present themselves for treatment who have been examined with sounds and told there were no strictures present, when a proper examination would reveal a badly strictured canal. A stricture that can be detected by a 25 bulbous bougie will frequently admit a thirty sound, and for this reason errors in diagnosis are made.

To meet with success in the treatment of urethral diseases it is necessary to make a careful examination. Neglect in this particular is why many failures are recorded. Patients with contracted meatus that will admit only a 26 or 28 bulbous bougie (urethrometer not being used) are told that they have no stricture, when it is impossible to determine whether the urethra is free of strictures until a bulbous bougie as large as the urethra is introduced.

The mistaken idea that every apparently gleety discharge from the urethra is an indication for the use of the sound, is clearly shown in the discharge due to prostatic congestion, discharge from gonorrheal inflammation of the seminal vesicles, the discharge of long standing after epididymitis, the discharge we frequently see from syphilitic mucous patches within the urethra, and other conditions that respond to proper treatment.

When a patient presents himself for treatment, if he has a highly sensitive urethra or discharge from the canal, first treat the urethra by irrigation until the sensitive condition has disappeared and discharge has been controlled, before making an examination or commencing treatment with instruments.

In treating stricture of the urethra by dilatation how often should we pass an instrument? This question has been written upon, argued and discussed at length, and there seems to be a wide variance of opinion as to the length

of time that should elapse between the sittings. In the use of sounds for the treatment of stricture there can be no fixed law in regard to the intervals to be allowed between the sittings. Each case must be watched separately, and the results of the introduction of the instrument noted, so as to determine when to use the instrument again. My opinion is that the majority of men, not studying the effects produced by an instrument passed through an organic stricture, influenced by the patient's desire for a rapid cure, are prone to pass instruments too often, thereby setting up an acute inflammatory condition and prolonging the treatment.

My experience in the treatment of urethral strictures coincides with that of Dr. Keyes, of New York. Probably most of you know his views on this question, but I will quote him at length so as to be plainly understood. He says: "Suppose a stricture which sensibly diminishes the size of the stream of urine, and is attended by gleet. Through this stricture a conical instrument is introduced, which is arrested for a moment, but gradually passes, stretching the stricture, and is distinctly 'grasped' as it is being withdrawn. What follows such an operation? At the next act of urination the stream is larger, and continues so during twenty-four hours. At the end of that time the stream is nearly as small as it was before the sound was used; the gleet is the same, or possibly increased. Now, for twenty-four to forty-eight hours the stream steadily becomes smaller, while the discharge grows more abundant and creamy. During the third or fourth day improvement commences; the stream again grows larger, the discharge becomes thinner and less copious, and this improvement often continues through the fifth and sixth or even seventh days, or longer, after which the volume of the stream commences to diminish and the discharge to become thicker. In such a case, if the same conical instrument first used

had been reintroduced at the end of twenty-four hours, it would have passed the stricture with about the same facility as on the day before; if after forty-eight hours, it would enter with more difficulty; if at the end of seventy-two hours, it would again enter as easily as on the first day; if introduction were first attempted on the fourth day, the sound would pass more easily than at first; if on the fifth, with more ease still, and it would not probably be so tightly 'grasped' on withdrawal; while in some cases the greatest ease of reintroduction is attained on the sixth, seventh, eighth day, or even later. This varies in different cases; but it may be stated, as a rule, *that it is bad surgery, in treating stricture by dilatation, to reintroduce an instrument—unless it be filiform—before the lapse of at least seventy-two hours, and that more rapid progress will be made with the case by waiting till after ninety-six hours —often even until the sixth, seventh or eighth day.*"

If any one doubts the truthfulness of the above statement, all that is necessary to be convinced to the contrary is to watch the effect of an instrument under the same circumstances.

The cure of a stricture by dilatation is brought about by "absorption" of cicatricial tissue, so if the stricture is not stretched up to the full size of the urethra, the cure is not perfected, and recontraction will in all probability take place. This holds true in regard to strictures that have been cut; and a large percentage of the urethrotomies that are not successful are due to neglected after-treatment. If a stricture can be cured by dilatation, the surgeon is not justifiable in subjecting the patient to a cutting operation that might possibly prove fatal. Strictures of recent formation, situated in the pendulous portion of the urethra, can usually be cured by dilatation, and those in the deep urethra respond readily to this method.

Now, in regard to internal urethrotomy in the deep ure-

thra, I know there are men who do this operation with but few accidents, but the best practice is to positively refuse to interfere unless the patient will submit to the external operation. The custom of doing internal urethrotomy in the office, and allowing the patient to go home in a hack or on a car cannot be too strongly condemned. It is an operation that is fraught with danger, so we should guard against any mishap, and give the patient the best treatment possible. The operation should be done at home, and the patient kept in bed for at least five days, and it would be safer still to require a week's rest.

The mere cutting of a stricture will never cure it; it is absolutely necessary to keep the urethra dilated up to its full size until perfect healing takes place, and all cicatricial tissue has disappeared as far as the sound will accomplish.

Before a stricture is cut the size of the urethra should be determined, and the stricture cut to this size. Then introduce a bulbous bougie and see if the slightest band of cicatricial tissue is left; if so reintroduce the urethrotome and cut all remaining bands. If the word meddlesome applies to any operator, it is the one who cuts a stricture to number 32 when the caliber of the urethra is 34, and never introduces a sound larger than the size the stricture was cut to. An operation of this kind cannot give relief; for in the future there will probably be a recontraction of the stricture. The same kind of operative work is done in cutting the meatus; it is either not cut to the full size of the urethra, or neglected and not kept dilated until healing takes place.

It is not my intention to appear dogmatic in regard to these apparently simple operations, but I so frequently see strictures that were improperly treated, and meatus that have to be incised a second time, that I cannot refrain from emphasizing these important points.

In my opinion, after internal urethrotomy instruments

are frequently passed too often; every fourth, fifth, or sixth day will give just as good results, and less pain to the patient, as when passed on the second and third. The nearer the stricture is to the meatus the shorter should be the intervals between the sittings.

It is bad practice to try and force an instrument through a stricture; it always results in damage to the urethra. If a stricture is of such small caliber that it seems impossible to pass an instrument at all, I feel sure that in many cases, if a stream of water is thrown against the stricture with an irrigator for a few minutes, that an instrument can be passed into the bladder. Under similar circumstances, if a two or four per cent. solution of cocaine is deposited at the stricture, it will produce contraction of the engorged vessels and tissues to such a degree that a filiform, or even larger instrument, can be passed.

The deep injection syringe, an instrument that is in general use, and one no doubt that has served a good purpose, is inferior to the endoscope. With the syringe it is a matter of guesswork whether the solution is deposited at the seat of inflammation; but with the endoscope we can make a careful examination of the entire urethra, and limit the application to the diseased surface.

Every discharge from the urethra of long standing is not due to a stricture that requires cutting or dilatation. In many cases the discharge is due to a chronic inflammation that produces a slight thickening of the urethra, and is diagnosed and occasionally operated upon as a stricture of large caliber. Strictures of this kind, if they can be called strictures, are the ones that give such quick and happy results from direct applications through the endoscope.

The granular condition that remains after a stricture has been dilated or cut to its full size, will respond more promptly to local applications through the endoscope than other means. While the sound and deep injection syringe was originally and is yet used for the relief of these condi-

tions, it is impossible to know the condition the urethra is left in when the patient is dismissed.

I frequently have patients who, having had a gleety discharge from the urethra for years, and having been treated with sounds for stricture until completely disgusted with instruments, make a permanent cure of the granular condition by a dozen or fifteen applications through the endoscope. The endoscope I use, and think one of the best, is Otis's instrument, with electric attachment, and Klotz tubes. The ordinary urethral tubes, with a head mirror to reflect the light, will not give satisfaction.

It is necessary to the surgeon's success and the patient's welfare to ascertain the condition of the patient's kidneys before doing an operation upon the urethra. I remember very well a case where an external urethrotomy was absolutely necessary to relieve a tight stricture of the deep urethra, that had caused a rupture, and the patient died from suppression of urine fifteen days after the operation, due to structural derangement of the kidney that was present before the operation. In urethral surgery preparatory treatment is very necessary. The bowels and kidneys should be in good working order, the urine should be rendered aseptic as far as possible, the parts to be operated upon should be thoroughly cleansed, and a dose of quinine before and after the operation is advisable. Taking these precautions will, I feel satisfied, reduce the mortality in surgical operations upon the urethra.

In closing, I would like to emphasize the importance of irrigation before surgical operations upon the urethral canal, whether it be only the passage of a sound or an internal urethrotomy. If this is done there will be fewer cases of urethral fever and less irritation and inflammation after using instruments.

Within the past twelve months I have used "hydrostatic irrigation" in the treatment of inflammatory conditions of the urethra and bladder, and it is far superior to any other

method. The container which holds a prescribed quantity of the solution to be used, at a temperature of 110 degrees F., is placed eight or nine feet from the floor. A glass nozzle is used to throw the fluid into the urethra and bladder. The anterior urethra is first thoroughly washed out, and then the nozzle is pressed firmly against the meatus, and the patient told to breathe deeply or try to urinate, and the fluid flows back into the bladder. When the bladder is full the patient is allowed to pass it out, and the bladder is refilled. The value of this method is that the urethra is distended to its full capacity, which forces the pus and germs from the glands and follicles of the canal.

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DISCUSSION ON DR. CHAMPION'S PAPER.

Dr. J. C. Olmsted, Atlanta: I would like to say, sir, that I consider Dr. Champion's paper a very able one. He has enunciated those principles of treatment which I think are recognized by all experienced and competent men. I particularly indorse what he said in regard to the utter worthlessness of plain sounds in the diagnosis of stricture; knowing that the bulb sound alone is fit for that purpose, and again, I think the matter of cleanliness of instruments is a point well taken. I have known a number of cases of infectious disease contracted by filthy instruments in the hands of practitioners. I also think, Mr. President, that the point the doctor made in regard to not passing urethral sounds too frequently is one we are apt to overlook.

I wish to express my thanks to the gentleman for his able summary in regard to the present status of urethral instrumentation.

THE RELATION OF THE STATE BOARD OF MEDICAL EXAMINERS TO THE MEDICAL PROFESSION OF THE STATE.

By E. R. ANTHONY, M.D., Griffin, Ga.,
Member of the Georgia Board of Examiners.

The crowning glory of the medical profession is its everlasting allegiance to the cause of science and humanity. Its devotion to science and humanity could have been demonstrated in no stronger way than its unceasing and persistent fight, in the last two decades, for a higher standard of medical education.

The men in our profession who should be enshrined in our hearts as objects of undying gratitude, are those who have fought hardest for the enactment of a law creating Boards of State Medical Examiners; for the great and broad principle upon which such laws are based is the protection of the people and the elevation of our profession.

The enactment of such a law had its friends and its foes; the former lauding its event as a most welcome factor in the elevation of our profession; the latter protesting against it as an infringement upon personal rights, and a restriction upon personal liberty. The indifference of legislators to the just demands of our profession for legislation along these lines, and the ignorance of the masses from whom they are selected upon the medical sciences, have retarded and sometimes throttled all legislation which had for its object the promotion and encouragement of medical learning. At last the light of a brighter day has dawned upon us, and our lawmakers have realized the fact that a demand

for a higher standard of education for medical men is not only in the interest of the profession, but is a necessity for the public weal. Hence the enactment of the law under which the State Board of Medical Examiners has been created.

So varied are the views held by the public, and by some members of our profession, as to the duties of the board, and so little understood are its powers, that a discussion, before this assembly of representative medical men of the "Relation of the State Board of Medical Examiners to the Profession of the State," can but prove beneficial and advantageous. A discussion of the "Relation of the Board to the Profession" cannot be made intelligently without necessitating a presentation also of its "Relation to the Applicant for Examination," and the "Duty of the Profession to the Board."

Permit me to say right here, that under the law, as it now exists, the State Board of Medical Examiners are not prosecuting officers. No power to deal with the violators of this law has been delegated to the board. Indeed, to have done so would not only have been without precedent, but absolutely impracticable. This act, no doubt, would be classed by our brethren of the legal profession as a "remedial statute." If it is, we should follow the rule of construction laid down by Blackstone, and always construe the act so as to "suppress the mischief and advance the remedy." To "suppress the mischief" in the prosecution of the illegal practitioners is, as it should be, purely a function of the court; to "advance the remedy" by seeing to it that no incompetent man is licensed to practice, is the duty of the board. Simply this and nothing more. Every member of the board in accepting the appointment "incurs a sacred obligation to the profession of the State to exert his best abilities to maintain its dignity and honor; to exalt its standing; and to extend the bounds of its usefulness." This is the great object which the board should hold steadily in

view, and to which it should make every other consideration subservient. To the extent that it advances this object, in the same degree does it discharge its obligation to the State. In carrying out this laudable purpose, it should be governed by wisdom in the protection of the public against unscientific men and methods; justice to the profession in excluding those who would humiliate and break down its claims to rank as one of the learned professions, and moderation in passing upon the merits of the applicants who are knocking timidly at the door of our profession for admission.

It is not within the province of this paper to criticise this law under which the Board of Examiners was created —no one has a right to criticise a law unless he can offer a better in its stead. That the law has its defects, no one can controvert; that it has its objectionable features, no one can deny; that the board has not, and cannot have, power to deal with violators of this law, is a matter of regret; that the duties of the board are very simple, we will admit; but repeal this law, defective as it may be; abolish this board, restricted as its powers and duties are, and you make this State the dumping-grounds for quacks and the promise land for impostors. In every country where the medical profession is held in high esteem—"the estimation in which the medical profession is held is always a criterion of the intelligence of a community"— the entrance to the profession is guarded by a Board of Examiners. This, then, is the essence of the duty of the board to the profession—to guard its entrance with jealous care and see that no incompetent and unworthy ones enter its sacred precincts.

The past, with its diploma mills, has bequeathed to us evil results which Examining Boards cannot entirely overcome. It is not within the power of the board to redress every past wrong, neither can it clear the waters that have so long been fouled by the questionable men who have

polluted the stream. To right these wrongs and to correct these evils, we must, in a great measure, still look to our code of ethics, the great regulator of the doctor's life. One object, dearer to the heart of every true physician than all things else, is the upholding of our code of ethics. "Our profession, in a greater measure than either of the other learned professions, derives its vigor and its charms from noble sentiments." Abolish the code of ethics and this charm is gone, its vigor weakened, and our profession degenerates into a trade. "To be ethical means to be a gentleman"—means to be governed by that "etiquette which regulates and controls the conduct of all men who aspire to the moral dignity of gentlemen." A doctor who is not ethical is a shame to himself, a disgrace to his high calling.

A proposition so plain that it may be accepted as a postulate is, that the environment of the medical profession in our State needs improvement. We believe that the board will be a great factor in bringing about such improvement, thereby demonstrating the fact that its creation is no failure, its existence is no mistake. We believe that the beneficent workings of this law, if correctly executed, will eventually purify the medical atmosphere of this State, and place our profession on a higher plane—too high for the mephitism of quackery to ascend, too high for the malaria of ignorance to reach.

Now as to the "Relation of the Board to the Student."

To be a success as a medical examiner, the examiner most assuredly must possess two requisites: a thorough knowledge of the subject upon which he examines, and absolute impartiality. These are the essentials, the double star, the rays of whose light must guide him in all his relations to the applicant for license. The bulk of medical science has increased so wonderfully in the last decade that it is utterly impossible for the medical student to become proficient in the eight leading branches in the short time of

three years. If he has become well grounded in the fundamental principles of the leading branches, he has accomplished much. The board, in conducting its examinations, cannot expect perfection; and it should remember that a "knowledge which falls far short of mastery may be of much practical value." It should formulate questions that are practical tests of the applicant's proficiency, and avoid questions that are severe tests of scientific erudition. Such questions do no good except to air the learning of the examiner. And yet these examinations should become more and more severe as the years go by. Not only is there more honor in passing a severe examination, but the one examined knows better how to estimate his acquirements, and then can have that self-confidence that is born alone of knowledge.

The question of preliminary education, what the minimum should be, how this standard should be measured, is preeminently a question in which every member of the medical profession is bound by self-interest and his duty to the public to interest himself. That our profession is more keenly alive to its importance to-day than ever before is a sign full of immense hope for the future. True, under the provisions of this law, it is a question with which the board has no direct connection; but, despite this fact, we feel that the board would be recreant to its trust and unfaithful to the high object for which it was created, did it not exert all the moral force in its power to secure a higher standard of preliminary education. Surely we all would welcome such a change, for we can but recognize in it a powerful factor in the work of elevating our profession. The time has come when it is the duty of every friend, and especially every member of our profession, to co-operate and bring about a demand and a plan for a higher preliminary education. A higher preliminary education is not simply an accomplishment, but it exerts a wonderful in-

fluence in molding the life and character of the young man and in preparing him to enter upon the study of the medical sciences. Without it he certainly enters upon the study of medicine at a great disadvantage. There has been urged one weak argument against a compulsory preliminary education for the medical student. That is, that your educated doctor will not locate in the backwoods districts. While it is admitted that learning and education are lost upon a community of uneducated people, we must concede that human life is just as sacred, disease just as difficult of diagnosis, and therapeutics just as hard of application among the unlettered children of poverty as they are among the cultured pets of fortune.

Before discussing the third heading of this paper, "The Duty of the Profession to the Board," I wish to say that the State Medical Association of Georgia can do more than can be expected from any other source to mold public opinion and educate the public mind upon these questions. In bringing about any great reform, we must first touch the great throbbing heart of the public, and prepare it for the change. And we must remember that very often, in order to accomplish reforms, it is not only necessary to run counter to the selfish interests of the few, but to fight the customs and superstitions of the many. In the beginning of this paper we admitted that the law under which the board was working had its defects, some of which may be remedied by proper amendments. It should be amended so as to require a higher standard of preliminary education, and it should be amended in the matter of dealing with the violators of the law. I would respectfully suggest that the president of this body appoint a committee to discuss and devise the best methods of dealing with the violators of this law, and the best plan of demanding a higher preparatory education; then to formulate their conclusions upon the subject, and

memorialize the legislature and have the law amended in accordance with these conclusions.

Reciprocity is recognized as a just and wholesome rule of action, and an exchange of equivalents is but another name for justice. The influence for good to the profession of the State in the institution of medical examining boards has already been clearly demonstrated. Then it is nothing but just and proper that the board should have the sympathies and co-operation of every regular physician in the State. The board needs your help. There is no member of our profession so high but that he should give it his moral support. The more honors you have gotten from the profession, the greater the debt you owe it, and the more binding is your obligation to lend your aid to every movement looking to its advancement. There is no one so humble but that the board needs his influence. The sun mirrors itself just as faithfully in the tiny dewdrop as it does on the bosom of the boundless ocean. The board needs your advice, your counsel. It is not infallible, and it is reasonable to suppose that it will make mistakes. In the blaze of that fierce light that always beats upon the administration of a public trust, it expects any mistakes it makes to reveal themselves to the censorious eye of the critic; but it does not regard its critics as enemies, but rather "as torch-bearers welcome for any light they may bring." It expects to have opposition, even from some in the ranks of our profession, but the light thrown out from the "very friction of opposing circumstances" will aid the board in its work of elevating our calling. We feel that higher medical education is here, and here to stay. Its banner is thrown out to the breezes, and upon its graceful folds, floating high above "against heaven's blue," is inscribed, "Purer ethics, better equipments, grander results." Yes, grander than anything ever done in battle-fields, sublimer than aught ever accomplished by eloquent statesmen

in senate halls, will be the work of the physician in the cause of science and humanity.

Discussion on Dr. Anthony's Paper.

Dr. J. C. Olmsted, Atlanta: I wish, Mr. President, that you had selected one abler and possessed of more eloquence than myself to open the discussion on this able paper. The theme of it is one, I think, which should commend itself to the mind and heart of the profession of Georgia. Intended to elevate our profession, to advance its interests, I am sure that he is indeed recreant of his duty to the medical profession who would not stand by and indorse the State law. That the law is perfect, or that the administration of the board is at all times beyond criticism, I would not claim, but I doubt not every member of that board has at heart the interests of his profession, and endeavors, to the best of his ability, to discharge his duties impartially and honestly. That the board can accomplish all that might be expected of it without the support of us who are in the ranks would be a singular proposition. We are all aware of the difficulties under which this board was inaugurated, of the opposition which it met from ignorance, prejudice, and other things too numerous to mention; and now that it has been formed, it is our duty to endeavor to make it better by giving it that aid which they have a right to demand, namely, through upholding and in aiding to bring those who infringe its rules to justice and within the law. I was struck with one of the points that the essayist made in regard to those students who have graduated from colleges, and with whom the board comes in contact. He spoke of the general illiteracy of many of those who seek entrance into our profession. That is a prolific subject. It is one that any of us who have ever been associated with medical colleges in the capacity of instructors or professors can certainly testify to the truth

of; and that some provision should be made, some law enacted, by which the ignorant and illiterate should not be permitted to enter our profession is evident. I think this matter should start with the medical colleges, which ought not to be permitted to admit the illiterate men that come in seeking professional honor. There is where it should start, and from no question of private policy and private gain should such medical institutions and such a state of things be permitted to exist. It making this statement, I am entirely within the limit of facts. It is known to every man connected with the faculty of a medical college that the conditions under which these gentlemen are admitted at times, and the conditions under which they are graduated, are a disgrace to every institution it concerns. I make no exception, and I claim that it applies to all.

It has been my duty in the past to be an examiner on the State Board where I impartially come in contact with graduates from every medical college in the State of Georgia, and I can certainly testify to the fact that the board is painfully impressed with the illiteracy, the absolute ignorance, of some of these graduates in regard to plain every-day matters, such as grammar, spelling, etc. And, Mr. President, in my capacity as a teacher in a medical college, I can testify to the same thing, and I can say, I do believe, as the doctor suggested in his paper, that it should be the effort, sought by this Association, by some method of legislation, to have a certain plan adopted whereby preliminary qualifications should be exacted for entrance into the study of medicine, by which men should be required at least to be able to read, to write, and spell correctly the English language. [Applause.]

Dr. J. S. Todd, Atlanta: I should do myself an injustice did I not thank Dr. Anthony for his able paper, and congratulate the medical profession of Georga that he is on

the Board of Examiners. I wish also to say that Dr. Olmsted has made my speech *verbatim et literatim et punctuatim*, and I indorse every word he has said. I did not think he would get up and do it, but he has. The success of homeopathy is not due to there being truth in the dogma, *similia similibus curantur*, but to the efficient training which their students get in four-year colleges, as well as the rigid examinations to which they are subjected before they are allowed to study medicine. Arm an intelligent man with a dogma, and he is dangerous. I am not vaporing when I say the Board of Health stands in danger of being washed away. My statements, I am afraid, will crystallize into a rain that will severely injure, if not destroy, the entire board at the next meeting of the legislature. Dr. Stewart, of Rockdale county, has given warning that the Dental Board has got to go. They have pulled his teeth, but they have not stopped his tongue. I can testify, after having been four years on a committee to secure a Board of Health, that he was the main factor in defeating it several times. He says he is not only going to wipe out the Dental Board, but the Medical Board will also hear from him. He is a wonderful worker, and I tell you, gentlemen, if you do not talk to your members of the legislature when you go home, you need not be surprised, when you wake up some fine morning, to find that the Board of Health has been abolished, and—

> "None pities him who in the snare,
> Warned before, would not beware"

Dr. Louis H. Jones, Atlanta: The discussion has been so free on Dr. Anthony's paper that there is not very much left for me to say. I can commend all that has been said along the line of a great necessity for a higher education among medical students. As a teacher for the last seven years in a medical college, giving daily instruction for six

months in a year. I have had an opportunity to note the deficiency of a large number of young men who apply for graduation in medical colleges. Oftentimes, they are men of good natural ability, but have not had much preliminary education. They are deficient in both writing and spelling, and under these circumstances it is exceedingly difficult, if not impossible, to turn men out of medical colleges in three or four years with a proper medical education. Whether the State can rectify this, except through the sentiments of its Association, and the members of the medical profession as individuals, I do not know. I believe the medical colleges are making an honest endeavor to elevate the standard of education among their graduates, and I sincerely trust that the Medical Board of Examiners will yearly increase the rigidity of their examinations. If it is necessary to reject men with diplomas from medical colleges in the State, let it be done; it will elevate the standard of medical education, and there will be forced into the profession a class of men who are properly prepared to enter one of the learned professions.

THE CREPITANT OR VESICULAR RALE AN INTER-PLEURAL SOUND AND NOT CAUSED IN THE PULMONARY TISSUE.

By LOUIS H. JONES, M.D., Atlanta, Ga.

Even among the most intelligent and truthful of our patients, we can often attach but little importance to subjective symptoms; we are forced to rely for a correct knowledge and accurate diagnosis of a case upon such signs as we can elicit by a physical examination. If we are to draw correct conclusions, our methods must be accurate, our deductions must be logical; they must stand the test of careful scientific analysis; they must conform to known physical laws.

Believing that in our text-books on physical diagnosis, and in the lectures of a majority of teachers of this branch, that certain sounds heard in connection with diseases of the lungs are misinterpreted, I have thought it well to lay before the Association some of the views held by a most distinguished physician, now dead, and to add to his testimony the results of my own limited experience. Particularly do I desire to do this in regard to the origin, seat and cause of what is known as the crepitant or vesicular râle. First let us see what the recognized authorities say: Da-Costa, in speaking of the vesicular or crepitant râle, says: "Its name indicates its seat. It is caused by agitation of fluid in the air-cells, or in the finest extremities of the bronchial tubes; or, to adopt a view now held by many, by the forcing open during inspiration of the air-cells agglutinated by exuded lymph. The first stage of pneumonia is the state in

which this râle is mostly engendered." Again, in speaking of pleural friction, he says: "It may be so much like crepitation that even long practice in auscultation will not enable us to determine at once whether the fine sounds we hear are the friction of a roughened pleura or the vesicular râles of an inflamed lung."

Loomis says of crepitant râles: "There are several views as to the production of these sounds; that they are due to the bubbling of air through a liquid in the pulmonary vesicles and terminal bronchioles; that at the end of expiration a viscid secretion glues the walls of the vesicles together, and their separation on inspiration gives rise to the crackling sounds; and that they are produced in the pleurae independently of the pulmonary parenchyma."

Osler, in speaking of pneumonia, says: "Very early there is heard at the end of inspiration the fine crepitant râle, a series of minute cracklings heard close to the ear, and perhaps not audible until a full breath is drawn; whether this is a fine pleural crepitus or is produced in the air-cells and finer bronchi, is an open question."

In speaking of pleurisy, Osler says: "There is another pleural friction sound which closely resembles, and is scarcely to be distinguished from, the fine crackling crepitus of pneumonia. This may be heard at the commencement of the disease, and also, as pointed out by McDonell, Sr., of Montreal, when the fluid has receded and the pleural layers have come together again."

Page says: "Crepitant râles are made in the air-cells, and are the only vesicular râles that exist. They are very fine, uniform crackling râles, heard only at the (tip) end of inspiration, and are unchanged by coughing. They are caused by the forcible separation of agglutinated cell-walls, as in the first stage of lobar pneumonia or agitation of thin fluid in the air-cells, as in pulmonary edema. They are heard also in the third or resolving stage of pneumonia.

where it is known as the râle redux, or râle that has returned or come back."

These expressions of opinion from the men who have stood at the top as diagnosticians for the past quarter of a century may, we think, be fairly taken as an expression of the most generally accepted belief concerning the cause and location of the crepitant râle, and while the opinions quoted show that most of the authorities admit the possibility, and even assert the existence, during pleurisy, of an interpleural sound, not to be distinguished from the crepitant râle, yet they believe and teach that what is called the crepitant râle is a sound produced in the vesicles, and that it is indicative of a diseased condition of the pulmonary parenchyma.

Dr. James R. Leaming, in papers read before the New York Academy of Medicine more than twenty years ago, made the assertion that both the crepitant and the subcrepitant rale were sounds which had their origin in the pleural and not the pulmonary tissues. This position he maintained most ably, and claimed that he had repeatedly demonstrated its correctness by post-mortem examinations. Early in my practice I read Leaming's work on the heart and lungs, and was so impressed with his clear and logical reasoning, that I began questioning the correctness of what I had been taught as a medical student, and, as I had opportunity, I attempted to verify clinically his position.

Let us first look a moment at the structure of the lungs and the mechanism of respiration. The lungs are made up of tubes and of air-cells or vesicles; the tubular or convective portion consisting of tubes which gradually grow smaller and smaller until they become microscopic and terminate in the air-cells. The cellular portion of the lung is capable of great distension, and is always completely filled with air; the volume of this air may be augmented by the expansion of the cells; it may be diminished by

their contraction, but the cells must always be full, they cannot be alternately full and empty. If partly filled with liquid, then air must occupy the remaining space. Were this not true, collapse of the lungs would inevitably occur, for the lung is always on the stretch, pulling, it is computed, with an elastic force of one-fourth to one pound to the square inch, and thus tending to separate the pleurae and close the air-cells; but, on the other hand, the air pressure on the interior of the lungs, that is, in the air-cells, is fifteen pounds to the square inch; now that such a discrepancy in pressure can be overcome, and the cells closed by their elastic force, is inconceivable; it is a physical impossibility. The lung is constantly being forcibly pressed by atmospheric pressure against the inside of the chest wall, thus completely filling the cavity of the thorax, whether in inspiration or expiration. If the cell walls come together, the parietal and visceral pleurae must separate. What then becomes of the theory of the alternate separation and apposition of the cell-walls covered with an exuded lymph?

Now let us look at the other theory, viz., that the crepitant râle is a sound caused by the bubbling of air through a liquid in the air-cells or terminal bronchioles. In order that air passing through a liquid should cause bubbling, it must move with some degree of rapidity, there must be a motion of the air in mass. Physiologists tell us that the air which is in contact with the respiratory epithelium is not sucked in and out with each inspiration, but that the air-cells are constantly fill with the residual air, which constitutes about eight-tenths of the total air capacity of the lungs. The tidal air entering the larger bronchi with each inspiration meets in the bronchioles the residual air and its current is checked, motion in mass ceases, and molecular motion takes its place, a rapid diffusion of gases occurs, the tidal air yielding up its oxygen and getting in exchange the carbon dioxide of the residual air. The con-

ditions for such diffusion are well fulfilled in the lungs, and added to this we have the red corpuscles exerting their eager affinity for the oxygen, and thus hastening the change. We all know that under such conditions diffusion will be rapid, yet it will be only a molecular motion. Can we conceive it otherwise? Could it be possible that the tidal air could enter microscopic tubes and cells, overcoming the friction and displacing in mass a quantity of residual air eight to ten times its own volume? Is not such a supposition opposed to all known physical laws? Is it not at variance with all physiology? Must we not abandon the idea of air currents in the vesicles, causing bursting of bubbles? Was not the theory set up to meet supposed conditions rather than to accord with known laws?

Pathology teaches us that early in pneumonia there is an exudation into the air-cells. Experience has shown us that early in the same disease there is usually heard the crepitant râle; thus the two things became to be associated together, without careful investigation and thought.

Unquestionably there are cases of pneumonia in which the crepitant râle is absent during the stage of exudation, but is clearly and unmistakably present after complete consolidation has occurred. If this be true, the seat of the râle cannot be in the vesicles.

Time will not allow me to go into a detailed report of cases, but within the last few months I have seen two cases of pneumonia; cases classical in every respect save in the absence of the crepitant râle until after complete consolidation was present. The high temperature, cough, rusty sputa, complete consolidation, tubular breathing, were all present, yet no crepitant râle could be detected in the early stages but after consolidation the so-called vesicular râles were abundant. With the appearance of the râles both patients began to complain of pain, the pain corresponding

in location with the area over which the râles could be most distinctly heard. We well know that very few cases of pneumonia, or indeed of any serious lesion of the lungs, occur which are not accompanied by an involvement of the pleurae. If, then, we reason, *post hoc ergo propter hoc*, have we not both in pneumonia and in pulmonary phthisis the same ground for locating the crepitant râle in the pleurae that we have for placing it in the pulmonary parenchyma? But are not the physical conditions for the production of the sound under discussion present, where we have inflamed pleural surfaces, covered with a fibrous exudation, moving the one over the other, constantly attempting to separate yet ever being held together by atmospheric pressure?

The human ear can locate with great accuracy the distance of a sound. Osler says of the crepitant râle: "A series of minute cracklings heard close to the ear." This is always true of the sound under discussion; it lacks the element of distance. While not a loud sound, yet the ear placed in contact with the naked chest wall will recognize that it hears a sound which is immediately beneath the surface, and not produced deep down in the lung tissue. The ear takes cognizance of distance, just as a muscle distinguishes between a light and a heavy body.

Careful and oft-repeated physical examinations, together with post-mortems when possible, must determine the question under discussion. We appeal to the profession to make such investigation, and not to accept without question the teachings of the day.

Discussion on Dr. Jones's Paper.

Dr. J. W. Duncan, Atlanta: As no one else manifests a desire to speak, I will say a few words in reference to Dr. Jones's paper. In a physiological condition of the lungs we hear the normal vesicular murmur. While I have very

great regard for the doctor's opinion on any medical subject, yet he did not mention that fact. He did not explain the vesicular murmur in normal lung tissue. He did not give us the idea whence that vesicular murmur originates, where it is formed, whether in the bronchioles or air-cells, or the larger bronchial tubes. He also mentions the fact that in the fine crepitation of pneumonia the sound was very near the ear. If this sound was produced even in the center of the lung tissue, or near it, or near the surface, there being some consolidation of lung tissue, it would naturally favor the sound being close to the ear, a solid body being a better conductor of sound than air itself. For a long time I have been taught and have believed that this murmur takes place in the bronchioles, and not strictly in the air-cells, as some have claimed. It is hard for me to accept any other view, and in the latter stages of pneumonia, as the disease is declining and resolution taking place, we have a different crepitant râle, a sub-crepitant râle, a louder sound; some call it a moist sound. I am satisfied that it is the larger bronchial tubes and the bronchioles. I think the nearness of the sound in a true fine crepitant râle in pneumonia, appearing to be so close to the ear, is not proof that it is intrapleural, but that it is in consequence of solidified lung tissue, which makes it a better conductor. You hear the whispering bronchophony in pneumonia, and you hear the noise in the throat of the patient while your ear is to the chest, being communicated from the throat to the ear. I think I have seen cases of pneumonia without involvement of the pleura. I have heard the crepitant râle in cases where the pleura was not involved, where the patient had no pleuritic pain, nor any indications of pleurisy, unless the crepitant râle is an indication; consequently I have been inclined heretofore to differentiate my cases of pleuro-pneumonia and pneumonia.

Dr. Jones (closing the discussion): Dr. Duncan has said that I did not explain the cause of normal vesicular murmur. I did not undertake to do it in the limited time at my disposal, and particularly to dwell upon the various theories as to the cause of the normal vesicular murmur, among which are muscular contraction and a number of others. I was simply endeavoring to explain my views as to the location of the crepitant râle.

ON SOME OCULAR DISTURBANCES OF GENERAL INTEREST.

By ALEX. W. STIRLING, M.D., C.M. (Edin.); D.P.H. (Lond.);
Atlanta, Georgia.

Mr. President and Gentlemen:

I propose in the following paper to confine myself to a few words concerning one or two of those ocular lesions which for some reason or another are likely to be of general interest.

Of conjunctival affections I may mention one-sided hyperemia, which should always suggest a foreign body in the conjunctival sac or on the cornea. Few of the minor operations of surgery will better repay the practitioner than a dexterous manipulation of the eye in such cases, and one should not be hurried in excluding a foreign body. Besides numerous cases in which, by the concentrated light of a lens, one has found small particles of dust of various composition when these had already been definitely excluded, I have notes of two cases which have come under my own observation, from the sulcus of the conjunctival sac of one of which there was removed a hazel catkin half an inch in length by a quarter of an inch broad, which had lain there for two years, causing a disturbance stated by the physician in attendance to be of no consequence; and from a similar position in the other case, a piece of copper nearly as large, which had passed through the lid several years previously.

A question, especially for skin specialists, is whether the disease called pemphigus of the conjunctiva is generally

associated with pemphigus of the skin. In the half dozen or so ocular cases which I have encountered I have seen only one in which the skin was also affected; but whether by pemphigus or not is uncertain. On the other hand, the affection of the conjunctiva has usually been associated with bullæ on the palate.

I need only say a few words in connection with ophthalmia of the new-born, and these to remark that this is a disease which will brook no trifling, but yet one which, if promptly and energetically treated, will generally respond with remarkable rapidity to proper remedies. Nothing is better than thorough and constant cleansing, painting once daily the well everted lids with fifteen to twenty grains to the ounce of nitrate of silver, and the application of boric ointment to the lashes to prevent their gluing together. An abrasion of the cornea may prove fatal to the eye, and there is no doubt that a considerable amount of skill is required to make the silver application thoroughly and yet gently. The child's head should be held between the knees of the physician while it lies on the nurse's lap and is firmly controlled. Considering the large amount of blindness produced by ophthalmia neonatorum, it appears to be a suitable question for discussion in this society whether the good example set by certain other States in connection with the compulsory reporting of such cases should not be followed here.

To pass to the cornea:—Our chief interest there to-day lies with ulcers and with foreign bodies. The latter are often difficult to find, and when found may be deeply imbedded in the corneal tissue, and not always quite easy of removal. The point to which I wish to draw attention, however, is that even after the simplest abrasion by the foreign body or by the instrument used in its removal, the protecting epithelium is destroyed, and not infrequently, as I have myself seen on more than one occasion, germs thereby

gain access to the corneal tissue, and severe ulceration, with or without hypopyon, results. Strict antisepsis is therefore advisable; frequently, also, a bandage for twenty-four hours, and sometimes atropine. Corneal abscesses and ulcers have a very various etiology, and are often dependent upon general ill-health. They usually demand shade, atropine, and antiseptic applications, but when near the periphery eserine may replace atropine in the absence of iritis. Should the ulcer perforate, there is then less likelihood of prolapse of the iris into the wound. Some of the severest forms of ulcer may be rapidly cut short by certain destructive agents, notably the electric cautery, the sharp spoon, strong solutions of perchloride of mercury in glycerine or alcohol, and frequently very prompt treatment in them also is required to save the whole eye from destruction. Poultices should in this, as in practically every other ocular disease, be carefully eschewed.

The watery eye, produced by obstruction in the lachrymal duct, should be of interest mainly for two reasons: First, that it arises probably most frequently from nasal catarrh, one of the reasons which make it advisable that even slight nasal complaints should not be neglected; and the second, that in the presence of duct obstruction the simplest ocular abrasion becomes serious. It is only the direst necessity which brings a surgeon to operate upon an eye whose duct is so affected, and yet it may be the lot of any of us to be called upon to remove a foreign body from the cornea, or to treat another traumatism in such an eye. The dangerous germs with which the conjunctival sac is swarming in this condition explain the necessity for its cure.

While cataract is looked upon as usually a purely local disturbance, except in the rare cases in which it is associated with certain diseases, as diabetes, there is one form of opacity in the lens which is believed to have important relation-

ships to conditions of general health. This is called zonular or lamellar, and sometimes congenital, cataract, and is by far the most frequent type of lenticular opacity met with in children. It affects a varying amount of the lens, and the opacity produced by it may be so slight as to interfere but little with vision, or so great as to disqualify its owner for ordinary work. The opacity is usually figured as an oval ring of varying thickness surrounding and concentric with the nucleus or center of the lens which it separates from the healthy periphery; but as a matter of fact in most zonular cataracts, the nucleus is also more or less affected. The lens grows by the superposition of new layers upon its exterior, formed from epithelial cells lining its capsule. At one time, therefore, the opaque ring in zonular cataract may have been the exterior of the lens directly beneath the capsule, and the point of interest for us lies in the questions: Why and when did the opacity arise? By comparing a series of measurements of the normal lens in fetal life and in infancy with measurements of the opaque ring in these cataractous lenses, it has been shown that if this ring were the external layer at the time of its unhealthy change, this change must have taken place, at least in some cases, during intra-uterine life. But among the few theories which have been advanced to account for zonular cataract, one which has gained much credence is that the condition is the result of rickets during the first two years of infancy. The fact just stated, that the size of the opaque ring supposed to have been the external layer during the formation of the opacity may be smaller than the lens at birth, does not actually prove that the lenticular disease may be intra-uterine, because it has not been positively shown that this layer must then have been the most external, and it may in reality have been deeper. That zonular cataract is frequently associated with the teeth said to be peculiar to rickets is held to sustain the proposi-

tion that they are both due to one and the same cause. I am not aware whether such teeth are familiar objects in this locality. Their peculiarity lies in the deficiency of the enamel of the permanent set, resulting in a honey-combed appearance, and affecting it may be all the teeth from the first molars forward. Mr. Jonathan Hutchinson, who first described the teeth of syphilis, considers it unproved that rickets ever produces dental anomalies, and thinks that the honey-combed condition is more probably due to a stomatitis caused by mercury given for convulsions in infancy, and that the cataract may be due to these convulsions. Their power to produce cataract may lie in the severe shaking to which the lens is then subjected, or more probably in an interference with nutrition during the attack, caused by cramp of the ciliary muscle, and perhaps also of the walls of blood-vessels which carry nutrient fluid to the tissues of that neighborhood. I need not enter further into this matter than to say that there is reason to believe that some cases of zonular cataract do arise in intra-uterine life, that some have been observed to arise both in youth and adult age from purely local causes within the eye, and that it has not yet been settled whether some condition of health other than rickets has any relationship to the cataract. Mr. Treacher Collins, of London, the well known ophthalmic pathologist, understanding rickets to be an uncommon disease in Australia, on inquiry was informed that in Adelaide, South Australia, rickets is a rare disease, and zonular cataract very infrequent. In Melbourne, Victoria, rickets was, until recently, comparatively rare, but is now more common, though much less severe than in Europe, while zonular cataract is exceedingly rare and the honey-combed condition of the dental enamel not often seen. In Sydney, New South Wales, the oldest city of Australia, rickets is said to be as common as in England, but its comparative severity is not definitely known. While Mr. Collins was

recently visiting in a professional capacity the brother of the Shah, he had excellent opportunity for inquiry and observation in regard to this matter in Persia, and he found that there rickets and zonular cataract were both very rare diseases. I received from him some time ago a request to inquire here into the relative frequency of these two complaints, and it is mainly on this account that I have brought the subject before you. I should therefore be glad of information from older inhabitants than myself concerning the frequency of rickets, the so-called rickety teeth, the cataract named zonular, lamellar, or congenital, and if any relationship can be properly shown to exist between them. No doubt some of those present may be able to throw some light on this matter.

It sometimes falls to the lot of the ophthalmic surgeon to be the first to diagnose serious disease of other parts. It is not uncommonly the case in Bright's disease, when the patient has either not been under treatment, or when the attending physician has failed to examine the urine, that albuminuric retinitis with hemorrhages has given the first clue to the origin of the patient's headaches and other symptoms. Then the outlook is bad, and two years are frequently said to be the limit of his life, when the chances are that he will die within a few months. Still, occasionally, after the discovery of this lesion, he may live for even five or six years, and acute nephritis, along with the vascular degeneration which originates the ocular hemorrhages, and the retinal condition itself, sometimes entirely disappear. Those cases also occurring during pregnancy may recover. Uremia may produce loss of vision by poisoning the cerebral visual centers, which is to be distinguished from its effects upon the eye.

Again, doubtful cases of sore throat are occasionally shown to have been diphtheritic from the ensuing paralysis

of the ciliary muscle. Two such have recently come under my own observation.

Iritis is a fairly common disease, and one which, on account of circumstances, has frequently to be treated in great measure by the non-specialist. The likelihood of an attack proving destructive to vision depends to a very great extent indeed upon its early recognition and prompt and energetic treatment. Among its many causes, rheumatism, frequently gonorrheal rheumatism, and syphilis are most common, if we exclude wounds, which in some occupations, and in the course of certain eye operations, not infrequently produce it. The recurrent form is generally rheumatic.

Iritis can be recognized by the change in color of the iris tissue due to hyperemia and exudation into and upon it, by contraction and lessened mobility of the pupil, also due to the hyperemia. There is pain in the eye and its neighborhood in acute cases. When there is pain on pressure, along with pericorneal injection of the subconjunctival tissue, the ciliary body is also usually affected. Sometimes blood (hyphemia) and pus (hypopyon) may be observed below between the iris and cornea. When it is attempted to dilate the pupil it is commonly found, and especially in cases of any duration, that the posterior surface of the iris has become attached through exudation to the anterior surface of the lens capsule. This shows itself by the refusal of the pupil to dilate with mydriatics in any part of its circumference, in which case, the forward circulation of the ocular fluids being prevented, the iris is driven in balloon shape towards the cornea and secondary glaucoma may result; or it is shown by a dilatation of the pupil which is only partial, points of the iris remaining adherent to the lens capsule, and making the pupil irregular in outline.

In an apparently healthy eye proof may sometimes be

found of a quondam iritis by the presence on the lens capsule of particles of pigment from the back of the iris. The whole pupil is sometimes filled by lymph thrown out by the iris, and vision is then reduced almost to nil. The treatment should be energetic, and have definite objects in view. These should be the reduction of congestion, rest for the iris and ciliary muscle, prevention or rupture of adhesions to the lens capsule, and the reduction of pain. Fortunately mydriatics, among which atropine is best known, exert a beneficial action in all these directions. The dilatation of the pupil diminishes the congestion of the iris, places it at rest, ruptures adhesions when not too completely organized, and brings the iris to the position in which it is farthest removed from the lens capsule, so preventing the formation of further adhesions, and to some extent removes pain. Care should be exercised in the use of atropine, especially by pulling forward the lower punctum to prevent the fluid entering the nose through the lachrymal duct.

Some persons are very susceptible to this drug, and the dry throat, flushed face, delirium, etc., of atropine poisoning are not infrequently met with in connection with eye cases. The ocular mucous membrane and the adjacent skin of others often become swollen and irritable without general symptoms, probably the result of fungoid contamination of the solution. In such cases atropine must be relinquished in favor of scopolamine, duboisin, or some other mydriatic. The addition of cocaine notably assists in the reduction of congestion, and to some extent furthers the other objects of treatment. Leeches on the temple, and when the ciliary region is inflamed warm applications to the eye, are also indicated, while internal medication will take its form from the cause of the individual case. At the same time both mercury and potassium iodide are valuable in cases of iritis which have no relationship to syphilis, as in the rheumatic form. The patient should wear smoked

glasses or a shade over both eyes. Some chronic cases with continued adhesion to the lens capsule require iridectomy.

There is a form of inflammation of the uveal tract—*i. e.*, of the iris, ciliary body, and choroid, which is apt to cause much greater and more prolonged anxiety to the surgeon than does the ordinary run of severe ocular disease. I refer to sympathetic ophthalmia. If there is one question in the domain of ocular surgery more trying than another, it is that concerning the treatment of an eye which has received a perforating wound without destruction of vision. When sight has been annulled, little difficulty is usually experienced in gaining permission for enucleation, but when the patient is still able to use it to some purpose, he is apt to be only too ready to lend an ear to whomsoever may advise procrastination. In this respect, the following should be borne in mind: When an instrument, such, for instance, as a fork, penetrates the capsule of the eye, it is apt to carry with it germs capable of setting up inflammation in such a fruitful soil as the highly vascular uveal tract. The inflammatory symptoms may at first be slight, the vision may remain fairly good, and it may appear superfluous destruction to remove an organ apparently so useful. But while the question is under discussion the parasitic life within the eye may be increasing, and not only there, but it may have spread itself outside the eye and be passing along within the optic nerve sheath towards the chiasma, may have extended farther, and may already for some time have been multiplying in the other eye before its presence is discovered. Once settled there decision comes too late, and the second eye may have to be excised in the hope of influencing a little for good the morbid process in the first. It is the history of not a few cases, as I have myself seen, that the first eye is removed too late to benefit the second, or the second too late to benefit the first, and the patient ends in total blindness. This does not mean that every eye

whose capsule has been divided should immediately be excised, otherwise many of our common operations would be unjustifiable. But it does mean that every such case deserves the closest attention in all its bearings, especial regard being paid to the condition of the instrument, the position of the wound (the ciliary region is believed to be the most dangerous), the age of the patient (young people are more susceptible than older), and the value of the eye. When the vision is lost, or nearly lost, speedy enucleation is indicated; when the vision remains good and the instrument is apparently aseptic, the eye is quiet and other things are favorable, especially if the wound can be thoroughly cleansed almost immediately after its occurrence, one may fairly be permitted to assume an expectant attitude. The injection through the wound, or with a needle into the vitreous, of a few drops of fresh chlorine water may be of service as a prophylactic, while both eyes are carefully watched for the appearance of pain or irritation, when enucleation will have to be resorted to. It must be borne in mind that, while the usual interval between the receipt of the wound and the advent of optic neuritis and cyclitis in the other eye, generally the first symptoms of sympathetic inflammation, is six or eight weeks, that may be as short as twelve days and as long as twenty years or over. An eye once wounded, remaining soft and irritable, is, except when it has been destroyed by panophthalmitis, even after long intervals, a continual menace to the second.

In connection with the supposed relationship between errors of refraction or of muscular balance and such serious phenomena as migraine, epilepsy and recurrent headache, without taking up an attitude of too great credulity, and while personally believing that it has scarcely been proved that these errors ever cause epilepsy, it is yet certain that, especially in delicate and nervous constitutions, very unpleasant symptoms, and notably more or less continuous

pains in various parts of the head, can be cured by the use of proper glasses. This, however, is also true, though to a less extent, of treatment directed to inflammations of the nose and the adjoining cavities.

Patients frequently inquire why their congenital refractive defects, hypermetropia and astigmatism did not seem to trouble them at all, or much less, in childhood. The answer to that question is to be found in the facts that in young eyes the muscle of accommodation is able to effect more and with less strain even before ten years of age than it is later, owing to a gradually diminishing elasticity of the lens, and that the eyes are apt to be more employed for near work, requiring greater effort, with advancing years. An illness in childhood will frequently, by weakening the ability to accommodate, leave an effect apparently somewhat, though not really, similar to that of age, and bring into prominence latent defects in the refractive formation of the eye.

One might remark also that short sight, or myopia, is not merely a refractive error, but is as well an actual disease of the posterior pole of the eye, attended when progressive or large in amount with no inconsiderable danger to vision, for it is not uncommonly associated with hemorrhage and detachment of the retina. Myopic eyes therefore, when the disease is developing in youth, should be treated on sound hygienic principles. Besides wearing the proper glasses, the patient should be allowed to use the eyes for near work only when the light is sufficient and preferably falling over the left shoulder, stooping should be prohibited, and the work must never be held close to the eyes. Occasionally reading should be entirely stopped for a time and dark glasses worn.

The subjective visual sensations occasionally associated with epilepsy and migraine are peculiar central phenomena, and if I am to judge from letters recently received con-

cerning a paper which I read on the subject before the ophthalmic section of the American Medical Association* last May, of interest to a number of physicians. A record, and where possible a delineation, of the appearances observed in these cases would be interesting, and possibly also profitable, for, as Gowers has shown, they may have an important bearing in modifying views concerning the number and position of the centers of vision. The visual sensations of migraine are generally, but not always, accompanied or followed by the usual headache and nausea, and take various forms, the most common being a mere blotting out of a portion of the field of vision, or this accompanied by the appearance of bright light sometimes colored, and both edged by the zigzag lines which have given to the phenomenon the name of "fortification spectrum." These spectra pass through their various stages of growth and disappearance mainly on one side of the visual field, but may cross to some degree the central line. The sensation which they produce, though unreal, is to the subject of it "a profound reality, which confuses the mind, and may make even recollection painful."

A peculiar connection has been observed between the yellow patches on the eyelids, called xanthelasma, and migrainous headaches. Besides others formerly, I have observed one very well marked case within the last few months. The minute anatomy of xanthelasma bears a close resemblance to that of elephantiasis.

This paper is merely a very imperfect reference to a fraction of those ocular subjects which may be at one time or another of interest to the majority of physicians. Among others specially worthy, I think, of notice are the relationships existing between nervous diseases and the eyes,

* "On Certain Subjective Visual Sensations," *Journal of the American Medical Association*, December 5, 1896.

too large a subject to be treated with a series of others in the time at our disposal, and glaucoma, a pathological process which is of great importance, should receive adequate and general attention.

DISCUSSION ON DR. STIRLING'S PAPER.

Dr. J. M. Crawford, Atlanta: This is a big subject, and I shall consider some of the easiest parts of it which the doctor has spoken of. He has referred to catarrhal ophthalmia, lamellar cataract, iritis, sympathetic ophthalmia, asthenopia, correcting errors of refraction for headaches, and so forth. Some of the points touched upon in the paper should be looked after very closely, as they refer more particularly to the general practitioner than they do to the specialist, because they fall under his care before they come under ours. For instance, ophthalmia neonatorum. This, of itself, is an extensive subject. If I were on the Board of Examiners and a man came before me and could not tell all about ophthalmia neonatorum, he would not get my vote.

I indorse the treatment spoken of by the doctor, and I think it is good treatment. I understand that he is in the habit of using from fifteen to twenty grains of nitrate of silver to the ounce of water applied on the everted lid once a day, which is more than I usually employ. I use from five to ten grains, not over ten grains, and often five will do, and even then in some cases where it causes a great deal of pain it can be relieved by salt water to neutralize it, making chloride of silver. By taking these cases early, I believe nearly every one can be relieved. I have seen a great many cases of ophthalmia neonatorum, and I have never known but two where the eyes were lost where the patient was seen early, and in these two cases death was expected any day or at any hour, but they

lived. These were the only two cases I have ever seen go blind when they were seen early. My plan is to have a nurse stay with the child, or have two nurses, one for the day and one for the night, and let the nurse wash the eye with a bichloride solution of 1 to 5, or 1 to 10,000 every fifteen minutes during the day, and every thirty minutes during the night. It is the poison and pressure we get from this matter which poisons the cornea and causes sloughing of the cornea. I believe most practitioners of medicine are agreed that it is well to put a drop or two of nitrate of silver, ten-grain solution to the ounce, in every baby's eye by the general practitioner. I do not know whether you are in the habit of doing this or not. I believe it would be a good idea to do so in every case. I advocate it, but a great many do not think of using nitrate of silver in every eye as soon as the child is born, washing the eye carefully. I have no doubt it would save a great many children from having ophthalmia neonatorum. The sooner these cases are taken care of, the eyes washed out with the bichloride solution, and the nitrate of silver applied, the better the prognosis will be.

There is a preparation called argonin, which is being lauded very highly in cases of ophthalmia neonatorum, or in cases rather of gonorrheal ophthalmia. A medical firm a few days ago sent me a sample of argonin, and I expect to try it on the next patient. It is a preparation of nitrate of silver. I understand it gives no pain, which is a point in its favor over nitrate of silver, because the latter is painful, as you all know.

Coming to the question of lamellar cataract, it has been my fortune, or misfortune, to have seen more cases of soft cataract, and lamellar cataract is a variety of soft cataract. But I have seen more cases where the whole lenticular surface was involved than where a portion of it was implicated. Of course, lamellar cataract is formed *in utero*, and when

the child is born it is already stationary and it does not often grow. You can by the use of the ophthalmoscope, by dilating the pupil slightly with a solution of atropine, see the clear cut of the cataract, and you can tell what operation has to be made.

Dr. Stirling (closing the discussion): I have practically nothing further to add, except that I still consider that the solution of nitrate of silver to be used in these cases ought to be a strong one. I do not think the pain of a twenty-grain solution is much greater than that caused by five grains, and its advantages are shown by experiment. I have had under my care a great number of these cases, and the effects of a single application of the twenty-grain solution have always been so plainly beneficial, while the pain has apparently been so slight and of so short a duration, that I shall certainly continue its use in preference to weaker strengths, which I have also used.

With reference to lamellar cataract, the question which I wanted to bring out was whether or not the cataract is born with the patient. Dr. Crawford says it is. The argument I advanced in my paper was that it was thought on certain grounds to be the result of rickets in early life. This is an open question.

Again, I do not quite agree with Dr. Crawford when he says that lamellar cataracts do not grow; as a matter of fact, I may safely say that a certain proportion of these cataracts do grow and ultimately involve the whole lens.

RAPID DILATATION OF THE UTERUS A CONSERVATIVE OPERATION.

By R. M. HARBIN, M.D, Rome, Ga.

My attention was recently called to an article in the *British Medical Journal* by Dr. Fournel, condemning rapid dilatation of the uterus as not being a conservative operation.

So far as my observation goes, the dangers from the operation are very slight where proper precautions have been taken. Divulsion of the uterus offers more relief in selected cases than the more complicated and dangerous operations and should be done before advising the latter.

The main indications for the operation are narrowness of the os and cervix of the uterus, flexions with dysmenorrhea and sterility, and the reflex symptoms arising from same. Personal observation makes me believe that many cases of obstinate nausea and vomiting of pregnancy can be relieved by rapid dilatation shortly before an expected conception, as we often have to perform abortion in cases that conceive very soon afterwards, rendering the operation again necessary. The cause of dysmenorrhea and sterility in a majority of cases is mechanical, and dilatation is usually followed by a relief of the symptoms if not a cure of the sterility. The contraindications are pyosalpinx and acute peritonitis. In an aggravated case of chronic pelvic peritonitis rapid dilatation can be done with safety after a few weeks of general and local treatment.

The operation should be done about a week before menstruation and the technique is simple. The patient should

be prepared by having been given a saline purge the day previous and a 1-4000 bichloride vaginal douche the day of the operation. The dorsal position and the bivalve speculum are preferable.

An anesthetic is required only in exceptional cases, and most women prefer some pain to the unpleasantness of the anesthetic.

A set of graduated uterine sounds is necessary to determine the direction and point of stenosis of the uterine canal. The canal should be straightened and gradually dilated so as to admit the dilator, and this part of the operation requires more tact and patience than any part of the procedure.

The cervix being drawn down and steadied by the vulsellum forceps, the dilator is introduced and the dilation is made about half an inch in opposite directions.

The lighter forms of dilators are preferable for this operation. Rest in the recumbent position and carbolized douches for a few days complete the treatment. If there has been much pelvic inflammation, absolute rest in bed for four or five days is required. I will mention an illustrative case.

Mrs. Blank, a small woman twenty-three years old and has been married one and a half years. She has had dysmenorrhea ever since she was seventeen years old, when menstruation first began. Two years before I saw her, she had appendicitis and since then has had chronic pelvic peritonitis, which was aggravated at each menstrual period. She had almost constant pelvic pain and difficulty in walking. During the last few menstruations she had hysterical convulsions and coma which would last four or five days. I was asked to see her with the attending physician, and found a narrow vagina with the uterus flexed retro-laterally and prolapsed with posterior adhesions, making it immovable. The ovaries were prolapsed and inflamed with adhesions.

The smallest uterine sound could not be introduced. Two skillful physicians and one gynecologist advised ovariotomy and anterior fixation of the uterus in view of the great disturbance arising from dysmenorrhea and the remote effect of the convulsions on the mind.

A more conservative course was pursued and the patient was given local treatments of iodine and ichthyol for three weeks, and then the uterus was subjected to rapid dilatation. Great difficulty was experienced in introducing the dilator, but I finally succeeded without the use of an anesthetic. After the operation she menstruated with comparative comfort and in three months conceived and is now eight months pregnant and her health has been excellent. After she is delivered I believe she has a better prospect for health than to have submitted to a radical operation. We take a great responsibility on ourselves to advise the removal of the ovaries in young married women and destroy all hopes of maternity.

Discussion on Dr. Harbin's Paper.

Dr. R. R. Kime, Atlanta: This is a very interesting subject. We have some leading men in the profession doing gynecological work who condemn dilatation of the uterus, and claim that a great many of the troubles with the tubes and ovaries and pelvic inflammatory trouble are produced by meddlesome interference with dilators and the curette. I am rather inclined to believe that many of the ill effects that come through the use of the dilator and curette in ordinary gynecological work are from the faulty manner in which they are used; in other words, that the work is not done in an aseptic manner. Frequently practitioners in doing work of this character fail to recognize the importance of infection of their patients with the dilator or with the sound, or with some other instrument that is being used in the uterine cavity, and by which means in-

fection is carried to the uterine cavity that did not previously exist there. But if practitioners will recognize the fact that dilatation of the cervix is a surgical procedure and requires preliminary preparations in order to do it in a thoroughly aseptic or antiseptic manner, then the results will not be so injurious. I think it is a conservative measure in a number of instances, and when properly carried out, as the doctor has stated, is beneficial and conserves the complications that may arise from want of drainage from the uterine cavity. There is no question in my mind that in many cases where we have pelvic complications due to endometritis, sterility due to an anteflexed or retroflexed uterus, an elongated cervix can be materially benefited by free open dilatation of the cervical canal, thus securing good and free drainage from the uterine cavity. In those cases I rarely ever find an instance in which I would dilate the cervix without supplementing it with a curettement of the disease that requires dilatation of the cervix. It is also essential to remove the diseased condition at the time you produce dilatation of the cervix. If we fail to remove the diseased condition of the endometrium, the traumatism produced by dilating the cervical canal may cause infection from above and not from below through instrumentation; the material coming down from the uterine cavity may be infectious in character, and you open up a new avenue of infection by the traumatism incident to the dilatation of the cervical canal. Your instruments and hands should be aseptic in your operations, but the uterine cavity should also be rendered as near as possible aseptic at the operation. It is here I think gauze tampons have a legitimate use in gynecological work, as well as in cases after operation. Some of you are aware that I strongly condemn the use of tampons in cases of septic infection after labor. In these cases, after dilatation of the cervical canal the tampon acts as a surgical dressing and controls the application of the

medicament to the uterine cavity. The application of gauze along with camphorated phenol or any other medicament may be used with beneficial effect. Another point comes in. After you have tamponed the cervical canal with gauze, in a week or ten days, and sometimes three weeks, in cases of sterility, you have a recontraction of the cervical canal. It is in these cases that a *drainage-tube, properly constructed, will give free exit to the material in the uterine cavity*, and at the same time prevent recontraction of internal os, which will be beneficial in a great many cases of sterility and relieve the patient materially. A great mistake that many physicians make is in dilating the cervical canal at their offices without making proper preliminary preparations. It is such operations that should be condemned.

Dr. C. D. Hurt, Atlanta: I do not care to discuss Dr. Harbin's paper at length, but want to reply to one portion of it in which he speaks of the necessity of producing abortion. I cannot agree with him that we ought to produce frequent abortions in these cases. I am satisfied it has been done many times when it might very well have been avoided, greatly to the relief of the patient. In these constrictions about the cervical canal, whether they be from flexions or narrowing of the channel, there is some disturbance of the nerves which touch this portion of the uterus, and they are calculated to give more trouble in cases of conception than if the cervix was in every respect normal; but if there has been dilatation of the cervical canal it overcomes in a large measure the tension upon these nerves, and if there has not been, the process of gestation so changes the condition of the uterus as to lessen the pressure, and while it may be very irritating in the beginning it gradually grows less. But even in the case of persistent nausea following conception, in those cases of constricted cervix or cervix with flexion, dilatation of the cervix alone without inter-

fering with the cavity of the uterus, even after conception, is not at all an objectionable, and becomes a satisfactory, remedy in many cases. I must protest against anything like a frequent production of abortion in cases of pregnancy with nausea. I have never seen the necessity for it, in as much as 2 per cent. of the cases that have come under my observation. By faithful effort and careful attention to the patient we may be able to steer her through with safety.

Dr. Harbin (closing the discussion): In replying to Dr. Hurt's criticism, he misunderstood me. My remarks applied to the cases that conceive very rapidly, and where we have such obstinate nausea and vomiting that it is necessary to induce abortion, and where oftentimes we are driven to the consideration of ovariotomy to prevent a recurrence of conception. In those cases I would advise dilatation of the uterus as a preventive more than anything else; but the remarks of my paper referred more to mechanical dysmenorrhea and sterility rapidly arising therefrom. According to a recent writer, 23 per cent. of all dysmenorrheas are mechanical, and the greater amount of sterilities are due to the same cause, and in such cases dilatation of the uterus is recommended.

REMARKS ON FISTULA IN ANO.

By WM. S. GOLDSMITH, M.D., Atlanta, Ga.

The relative frequency of fistula in ano as compared with other rectal affections induces me to a consideration of this interesting, though perhaps well-worn subject. Some differences of opinion exist among authors as to the frequency of fistula. Allingham states that in a collection of 4,000 consecutive rectal cases in the out-patient department of St. Mark's Hospital, 1,057 were fistula in ano, 196 abscesses, 151 of which subsequently became fistula, and that for a period of several years two-thirds of the cases operated on in this hospital were for fistula.

Matthews, on the other hand, states that while the margin is small, internal hemorrhoids have occurred more frequently in his practice. Omitting the simpler forms of rectal affections, such as fissure and ulcer, and accepting fistula and internal hemorrhoids as the most common, I am inclined to place the former at the head of the list. This is my experience in private practice, and that also of the cases presented at one of the largest outdoor surgical clinics in the South. Fistula, therefore, occupying such a prominent position among the more common and grave surgical diseases, I ask your indulgence that I may briefly bring out some points underlying the principles of treatment.

In common with all other practitioners, I am inclined to a certain degree of partiality in the use of the expression "conservative surgery," but in the discussion of this affection I shall for once endeavor to escape its fascinative eu-

phony. Individual experience has amply demonstrated that only the most radical and thorough technique is productive of the permanent results so anxiously sought, and any deviation from this rule is most likely to redound to our discredit. I trust that my attitude in laying such particular stress on this point will not be charged to exaggerated presumption, as I am sure that all of us can recall an instance in our surgical work where a poor result is safely attributed to some negligence in technique or undue trepidation in method.

I feel no hesitancy in declaring that the incision of all fistulous tracts and sinuses, and the complete section of the sphincter muscles, with the knife, is the only method by which we can, with considerable certainty, assure the patient that the operation will result in a rapid and successful cure. The methods of ligation and chemical irritation will not, therefore, enter into the discussion. The fallacious methods advocated by the older writers cannot be other than productive of most unsuccessful and humiliating results. For instance, Hamilton, in his Principles and Practice of Surgery, says: "The probe or somewhat flexible groove director, being now thrust into the rectum and brought out at the anus, the operation is completed by dividing the intermediate tissues. Having cut the sphincter, it only remains to lay a small piece of lint between the margins of the wound and place the patient in bed."

Dr. Matthews, in his book on Diseases of the Rectum, corrects this proposition in the following admirable manner: "To illustrate how erroneous the advice is, allow me to cite a case: If an abscess in the ischio-rectal fossa has left a sinus which runs directly into the bowel, and from this branch a fistula runs out into the perineum, and another diverges from the main channel into the buttock, no such operation as is described by Hamilton would effect a cure. It is the smallest part of the operation to lay open the tissues which lie over the main sinus. How often it is that

the surgeon is disappointed in the wounds refusing to heal after an operation for fistula, and an investigation reveals that it is due to a small sinus or pocket that has been overlooked! I am sure after a long experience in dealing with this operation, that in the majority of cases operated upon, if a single sinus is left, a good result will not be obtained. In other words, the inflammation excited will not be sufficient to eradicate the branch fistula. The flaps or thin edges of the wound alone, if left, would prevent good union."

I have yet to see a wound made in the area usually involved fail to promptly and satisfactorily granulate, provided it has had the benefit of a thorough eradication of all morbid tissues. To further elucidate this point, suppose all branches and pockets have been opened, should the operation be pronounced completed? Decidedly no. And just here my friend Dr. Matthews executes a procedure that is rather tedious, and, I think, quite unnecessary. He advises the excision of the whole bottom of the wound, using pinch forceps and curved scissors, and states that he is not satisfied with simply scraping out the sinuses. I think the careful use of the Volkman spoon, together with the application of peroxide of hydrogen, in the manner to be described, is far preferable. After incising the main tract and all sinuses, satisfying myself that the superior extremity of the original tract is reached, and making a rather prolonged search for pockets and hidden branches, I trim away the overhanging edges of skin along the entire cut area, paying particular attention to the edges and vicinity of the original external apertures.

This is followed by a thorough curettage of the bottom of the sinus, and the removal, as far as possible, of every particle of the so-called pyogenic membrane. The wound is irrigated and sponged as dry as circumstances will permit. I now use peroxide of hydrogen, full strength, ap-

plied in the form of a spray by an ordinary hand atomizer. It is pleasing to observe the excellent effect this valuable agent has on the débris unavoidably retained in the wound. The hydrogen used in this manner penetrates into every minute pocket and cuts out particles of tissue that it is impossible to remove, except by the total excision of the entire lining membrane. Having decided acid reaction, it is most valuable in checking the otherwise profuse oozing accompanying the simple curetting or excision. The splendid results attained by the use of peroxide of hydrogen in the manner described are obtainable in other lines of work where the same action is desired, and has been used by Dr. Westmoreland and myself most satisfactorily in the treatment of chronic osteo-myelitis and all varieties of indolent ulcers.

I now wish to invade the precincts of conservative surgery: Where there are two or more internal openings into the bowel, widely divergent, sever only one at a sitting. Of course if the openings are in close proximity, the exercise of some ingenuity may be practiced and virtually one cut through the muscle will suffice; but if any doubt exists as to your ability to accomplish this, err on the right side, if erring it is. A recent case presented four distinct tracts leading to one internal opening. These were all apparently primary sinuses, as each had from two to four branches. My relief can be imagined when I found that only one internal opening existed, necessitating a single section of the muscle. It is unpleasant to relate that operations have been done where even a single section of the muscle was avoided. It is apparent to all the degree of absurdity and mutilating barbarity abounding in such work. What line of reasoning is pursued to induce such a stupid procedure is beyond my comprehension. Another interesting and most valuable point in connection with the technique, is the recognition of the influence a contracted sphincter mus-

cle plays in the actual performance of the operation and the tremendous effect involved in the repair of the wound. We know that any irritation in the vicinity of the muscles will cause a contracted condition which is continued so long as the irritant is present, and is productive of so many reflex phenomena, aside from the discomfort accompanying defecation. If this muscle is not stretched, this spasm remaining unrelaxed, mere section of the muscle not only does not abolish, but vastly increases the irritation, with accompanying increase in spasm. Consider the effect of this condition on the effort of nature to bring together the ends of this muscle. It is like a balking horse. The more we whip, the more unreasonable it becomes. On the other hand, suppose the muscle is thoroughly stretched, carefully and slowly, and with the intention of relaxing each individual fiber. The divulsion temporarily paralyzes the muscle, and for a few hours has absolute rest and quiet. The nerve ends gain their freedom and the pain and reflexes are consequently obliterated. The muscle having had a good rest, does not now resent the process of repair and joins in with increased vigor toward the accomplishment of a rapid recovery. This divulsion of the sphincter muscles is also especially indicated in operations for hemorrhoids, and in fact all operations in and about the rectum where physiological recuperation of functional activity is so essential to a cure.

The actual cautery is a most valuable adjuvant in the treatment of old sinuses already operated upon, and through some error of management or the run-down condition of the patient, fail to respond to our efforts to heal. There is no agent, in my judgment, so material in stimulating granulation to a new and active growth. Patients are usually greatly debilitated as the result of old fistula and sometimes make exceedingly slow progress towards regaining their wonted health. I have prescribed, with happy effects, a

mercurial in the form of one-eighth grain to one-fourth grain protoiodide mercury, with extract gentian. This combination is not only an excellent tonic, but is very beneficial in toning up the liver, thereby rendering the use of laxatives and enemata wholly unnecessary. As an absorbent it is also very efficient, as often there are masses of indurated tissue left which can only be removed by this method.

The question as to the influence of pulmonary tuberculosis on radical operations for fistula in ano has been so widely discussed that only slight reference need be made in this connection. I believe the consensus of opinion among the authorities is that as a general proposition, the presence of phthisis should have absolutely no weight with us in deciding upon and performing such operations as we see fit. Personally, I adhere rigidly to this view, and have yet to see a satisfactory reason why I should not continue to do so. I have seen several cases where there were decided symptoms of phthsis, and from such later information as I could obtain, nothing but the happiest results were secured. Our only guide is the physical condition of the patient. If he is strong enough to take the anesthetic and resist the shock attendant upon an operation of such magnitude, we should not be deterred from rendering such operative assistance as our judgment dictates.

DISCUSSION ON DR. GOLDSMITH'S PAPER.

Dr. J. B. Morgan, Augusta: Very little on this subject can be added by me to Dr. Goldsmith's most excellent paper. I have operated quite frequently for fistula in ano, and I thoroughly agree with the doctor in his conclusions. It is an operation that we frequently have to do, and am in full accord with him, that we should never sever the sphincter in but one place if it be possible to avoid it; but sometimes when there are two or more fistulæ, which open

into as many different places in the rectum, it becomes exceedingly difficult to do this. I saw a case recently at the hospital in Augusta in which I made out five distinct openings in the rectum. The sphincter was cut in one place, and the other fistulæ were opened down to the rectum, carefully curetted, and the tears in the rectum, together with the incisions made down to the rectum, stitched up The result has been anything but satisfactory. In cases of this nature, I am sure that Whitehead's operation offers the greatest hope of relief.

Dr. W. L. Champion, Atlanta: I thoroughly agree with Dr. Goldsmith in all the remarks made in his paper, and I regard it as a valuable and interesting contribution to the surgery of fistula in ano. I am satisfied a great many failures from operations upon fistula in ano are due to tracts that lead off from the main fistula that are not opened. I recall the last case I operated on. After cutting the fistula I found a tract that ran an inch and a half up the gut. It was incised and the edges were trimmed off.

One point that Dr. Goldsmith did not lay enough stress on is keeping the tract thoroughly packed, opening it up with every dressing. Sometimes the granulating surfaces are brought together, united above, and leave the tract below. It ought to be thoroughly packed and a probe passed through the tract every morning when dressed.

In regard to peroxide of hydrogen, I consider it a valuable and useful agent in cases of this kind.

Dr. J. S. Horsley, West Point: I fully agree with the remarks of Dr. Goldsmith. I have had some experience in the treatment of fistula in ano, and the main point I would call attention to is his advice, that the presence of phthisis need not prevent operation in any case, particularly if the lung trouble is recent. I think the idea of using a curette after the cutting is a very valuable one and ought

to be practiced in every case. I do not believe dissecting out the pyogenic membrane is a necessity in every case.

Dr. L. G. Hardman, Harmony Grove: This subject of fistula in ano is very interesting, and I consider the doctor's paper a very valuable one. In reference to consumption in connection with fistula in ano, I am inclined to take the reverse view that is generally expressed; that is to say, I believe the constant reflex action produced by irritation of the rectum may bring about emaciation and general debility, so that subjects that would be inclined at all to tuberculosis would be more likely to have it. Therefore, rather than to think it at all dangerous to operate on fistula in ano in cases of tuberculosis, I would be inclined to think it would be beneficial. I think it is very important that a cutting operation is done; that after the division has been thorough, that the curetting be thoroughly done, and the wound kept thoroughly packed.

As to the use of protoiodide of mercury in those cases, so far as its absorbing power is concerned, it occurs to me the good effect of the remedy is noticeable, especially in cases where there has been some specific taint connected with it. If it has any special effect on the rectum as an absorbent I do not know. But in cases where there is any specific taint it would be specially indicated. I recently had a case which gave me no little trouble, in which there were very extensive fistulæ, and in which I had very alarming hemorrhage. In this case the operation was done with the use of cocaine, injecting it in the tissue between the fistula and the rectum proper. Following the operation there was very profuse hemorrhage, compelling me to dilate the rectum, introduce a speculum, and to pack the rectum thoroughly.

Dr. Goldsmith (closing the discussion): In order to make my remarks as brief as possible, I did not go into the application of the dressings, nor of the different

methods of operation. In reference to the immediate closing of the wound, as suggested by Dr. Morgan, I have never attempted that procedure, believing that it is unsurgical. I think we are taking considerable liberty with a patient to submit him to an anesthetic in order to increase the operation. I do not think I should try it with the technique as followed out in my paper. I never get rapid dilatation of the wound. In these old debilitated patients we have, as has been suggested, a slow granulating process taking place. Of course, we cannot apply the actual cautery in these cases; in that event I touch up the granulations with nitrate of silver, or apply balsam of Peru on the dressing, keeping the wound open. I pack the wound the first twenty-four hours tightly to prevent subsequent hemorrhage. Notwithstanding the use of peroxide of hydrogen spray, after the first dressing of twenty-four hours the dressing is made much lighter and sufficiently pliable to keep the edges of the wound apart.

As to the use of cocaine, as suggested by Dr. Harbin, and the untoward result caused by hemorrhage, I never use cocaine when operating about the rectum. I may inject a drop or two to open an abscess, but in an operation for the smallest fistulous tract, or a small hemorrhage, I would be chary about its use.

REMARKS ON APPENDICITIS, WITH A REPORT OF TWENTY-SIX CASES OPERATED ON DURING THE PAST TWELVE MONTHS.

By HUNTER McGUIRE, M.D., LL.D.

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Mr. President and Gentlemen of the Medical Society of Georgia:

First, let me thank you for the kind invitation of your distinguished president, which gives me the pleasure of being with you to-day and the honor of reading a paper before your Association.

For a time I was at a loss to know what subject to select, but finally concluded that it might prove of interest to report my work in appendicitis for the past year, and to discuss a few practical points connected with the disease. An analysis of the 26 cases reported will show that 19 were of the chronic form, and 7 of the acute; that 13 occurred in males and 13 in females; that 25 recovered and 1 died.*

So much has been written on appendicitis that I do not propose to discuss the subject systematically, but simply wish to give my views briefly on several questions in which there are still legitimate differences of opinion, and thus invite a general discussion of the subject on the part of the Society.

*In all these operations I have been assisted by my son, Dr. Stuart McGuire, who in many of the cases did most of the work; Dr. E. L. Hobson gave the chloroform; Dr. Frank Hancock, of St. Luke's Home, and Drs. Edwards and Wooling, of the Virginia Hospital, were also assistants.

1. The Importance of Operating for Appendicitis During an Interval between Attacks.

All of the 19 cases of chronic, or relapsing, appendicitis embraced in the present report recovered. In looking over my record book for previous years, I find that I have operated on 33 other cases with only one fatal result, thus making a total of 52 consecutive operations for this form of appendicitis, with one death. It is only fair to add that one of my cases was operated on for me by Dr. Joseph Price, who generously came from Philadelphia to do the work which for some personal reasons my son, Dr. Stuart McGuire, and I wished to avoid. The results I have attained are no better than many other operators have had, and I attribute my success largely to the fact that, if possible, I operate during the quiescent stage, as Mr. Treves originally suggested in 1886, when danger of sepsis is passed and inflammatory symptoms have disappeared. The danger is practically nothing if the surgery is clean. If you will carefully read some of the reports of my cases, you will see that I sometimes wait, and possibly in a few instances with some risk to the patient, until the acute symptoms pass off and sufficient time has elapsed for all inflammation to disappear. This requires generally two or three weeks, and during this period of waiting I keep the bowels freely open, attend carefully to the diet, restrict exercise by confinement to room or bed, and give 1-30 of a grain of bichloride of mercury three or four times a day as an intestinal antiseptic. In this way I have been able to tide the patient over the acute stage in a number of cases, and to operate during the interval between the attacks.

2. Symptoms which Determine the Safety of Postponing Operative Interference until the Acute Stage has Passed.

When we remember that fully one-half of all the cases of appendicitis recover from the first attack; that sponta-

neous resolution takes place when peritonitis, exudation, and sometimes even suppuration, have been present; and that a large number of cases which recover without an operation in the primary attack remain well and have no recurrence of the disease, the question of when to operate or not to operate is a very nice, difficult, and always important one.

I agree with Wyeth, that if you have a competent surgeon, one skilled in abdominal work, and the patient can be operated on within twelve hours of the first symptoms of the attack, 99 per cent. will be cured. But we frequently see the cases after these twelve hours have expired, and surgeons of experience in such work are not always within call. I confess I am not in favor of an operation in all cases as soon as a positive diagnosis is made. Too many of them get well and stay well to warrant it, and others can be made to wait, and have the operation done during an interval between the attacks, when the inflammatory symptoms have almost if not quite disappeared, the danger of sepsis has been passed, and the risk of death from an operation is almost practically *nil*.

When the attack is sudden and severe, the pain intense, pulse rapid, temperature high, respiration short and thoracic, abdomen hard and distended, face pinched and anxious—especially if the group of symptoms have been ushered in with a chill—the only hope for life is an operation, and the sooner the better. Such a case is called a fulminating one (it comes on like an explosion), and we are not warranted in waiting an hour to try medicinal remedies. In such cases, if, along with other symptoms, there is shock, perforation will almost certainly be found, and the chances for life are very slight even with an early operation. Fortunately such cases are very uncommon, but it is just such cases that have made some good surgeons say, "Operate in all cases, and at once, when the diagnosis is made." It is

these fulminating cases that have produced a panic among the lay people, and have struck terror among many practitioners of medicine. I have seen during the past year but one case of perforating appendicitis; the man was moribund when I was called in and no operation was attempted.

When the symptoms are presented more slowly and less severely, when the pain is not so great, abdomen flat, pulse, temperature and respiration nearly normal, little or no swelling or hardness in the right iliac region, then there is no such reason for haste. We can safely wait for some hours and watch the progress of the case, and this watch should be most carefully made. Of all the cardinal symptoms the temperature is the least reliable, and, in many cases, should be the least considered. The nausea and vomiting and the effect of the disease on the sympathetic system, is often so profound as to keep the temperature down to almost normal. In cases No 17 and No. 25 the temperature was 99 degrees, and yet I found in each the appendix dead and so rotten that it was difficult to handle it without tearing it; but it is important to remember that while the absence of high temperature is no indication that serious mischief is not going on, the presence of a high temperature, say 102 degrees, shows that serious changes are probably taking place. The most important symptom to note is the pulse; it is what we used to call the "abdominal pulse," small, thready and frequent. As the case improves, the pulse gets less frequent and less small, and *vice versa*, when the inflammation grows worse the pulse gets more frequent. In appendicitis a pulse of 120 degrees is a sign of great danger. When the pain grows worse, the pulse faster, and possibly the temperature higher, and rigidity of muscles over the inflamed spot greater, the case is growing worse.

3. Value and Limits of Saline Purgation.

In an ordinary case, not a fulminating one, after a short

time the pain abates, the fever lessens, the pulse gets slower, the abdomen less hard and tender, and all the urgent symptoms more or less subside—they do not disappear, but are less pronounced—and then there comes in a remedy which in my hands has been as certainly valuable for good as quinine in malaria, or arsenic in neuralgia; that is, saline purgatives, given in frequent doses until the patient is freely and repeatedly purged. The copious and numerous watery operations "bleed" the bowels and peritoneum and lessen the congestion or inflammation. I have watched case after case during this period of lull in the symptoms, in grave doubt whether the exudate would be taken up and resolution of the inflammatory product occur, or whether it would continue on to suppuration or gangrene, or both, and have seen the former rapidly follow free saline purgation.

If the disease continues after the purging, the abdomen is left in a better condition for a future surgical operation. I am always glad, in any abdominal or pelvic surgery, to know that my patient has been well purged and that the bowels are empty. If, after free purging, the pain continues, the pulse is rapid, the belly tender, an operation should be done without further delay. Some surgeons are strongly opposed to the attempt to purge, and in some cases rightly so. In fulminating appendicitis, an attempt to purge would most likely fail and the purgative add materially to the trouble; and to try to purge a case when pus or gangrene was present would be simply silly and mischievous; but to denounce saline purgation in every case is as wrong in principle and in fact as to demand operation in every case as soon as the diagnosis of the disease is made.

4. Relative Frequency of the Disease in the Two Sexes.

From the reports of many surgeons we learn that appendicitis is much more common in males than in females—

the proportion stated is one to four. This has not, however, been my experience. In the cases for the past year, which I present to-day, it will be seen that thirteen were females and thirteen were males, and this has been about the proportion of all my cases, amounting now to one hundred and fifty-five, the cases being nearly equally divided between the two sexes. At one time, say ten years ago, it was believed that the female was almost exempt from inflammation of the vermiform appendix. Lately, however, more and more cases have been seen in that sex. There is certainly no difference in the anatomy, physiology, or pathology of the organ in the two sexes to account for its greater frequency in the male; the additional little artery—sometimes but not always found in the female, and supposed to give better nutrition to the appendix in that sex—will scarcely explain the difference. By some it is ascribed to injury to the appendix by the psoas muscle in the male. Is the relation of this same muscle in the female so markedly different? I think not. Frankly, I am at a loss to know how to explain my record. I know that I am no better, and in many cases not so good, a diagnostician as some other surgeons, and yet I cannot help sometimes thinking that the very aggressive gynecologists, and I beg to assure any of them present that I mean no offense, have taught us so much about ovaritis, salpingitis, tubal pregnancy, and so forth, *ad infinitum*, that the hard-working, honest practitioner is led to believe that every unusual symptom of trouble about the pelvis must refer to some one or other of the female organs of generation, and I fear many a case of trouble about the cecum and appendix has been treated for ovarian or tubular disease. Indeed, I confess to having made the mistake in more than one instance myself. In one of the cases in this report, in my ignorance, I treated the patient for some months for ovarian trouble, and when at last the symptoms were so pronounced that I could no

longer mistake them and I operated, I found an adherent appendix filled with pus. I think it would be well, when called in to see an obscure case of pelvic trouble in the female, not to let the gynecologist make us believe that there is nothing else in a woman's pelvis but the uterus, tubes and ovaries. I recall a case, fifteen years ago, of a lady to whom I was called in consultation by Dr. Lewis Wheat, of my city. Two days before she had been delivered of a child and was supposed to be suffering from puerperal sepsis. She died, and as the labor had been easy and natural, it was difficult to explain the result. Dr. Wheat made a post-mortem and found that a large abscess of the appendix had bursted during labor and flooded the cavity of the abdomen with pus. In this connection Case No. 21 is interesting. This lady, married, aged thirty-three, had been in bed for five months suffering from frequent attacks of violent pain in the right iliac region, spreading over the whole of the abdomen. For these attacks she was given morphia by a physician then in attendance, but now dead. The attacks were so frequent and the morphia given so liberally, that she became an opium habitué, and was miserable without the drug. She was naturally a weak, hysterical woman, and this state of mind and body, along with the opium, made it very difficult to get from her a true story of the case. I found that she was pregnant about four months (although she denied it most emphatically), and that her tubes and ovaries were free from disease. She was tender over the right iliac region, and I found there more muscular tension than upon the opposite side; there was no swelling. The point of tenderness was in the right flank on a line with the interior superior spinous process, and not in the pelvis. An examination through the vagina of the contents of her pelvis gave her no pain. When the attacks were at their worst, she had vomiting and tympanitis. When I opened the abdomen I found an inflamed and adherent appendix, with some exudate but no pus. She got

well, gave up voluntarily the morphia before she left the hospital, and is now in the eighth month of pregnancy. This is the second time I have operated for appendicitis in pregnant women—the other case at the sixth month of pregnancy. Both cases recovered and neither miscarried. I do not think one should hesitate to operate during any period of pregnancy, or even during parturition, if the case required it.

5. *Differential Diagnosis between Appendicitis and Disease of the Tubes and Ovaries.*

The diagnosis is not easy when inflammation of the right tube and ovary and of the appendix occur at the same time as in cases Nos. 9, 13, 14 and 20. We have in both rapid pulse, rise of temperature, pain, vomiting and tympanitis. There are, however, some points of difference that will often enable us to distinguish between the two diseases. Appendicitis begins more acutely. If it is a chronic case there is a history of one or more former sharp and sudden attacks. Lesions of tubes and ovaries are of older date and have a history of menstrual disorder. The pain of appendicitis is acute, frequently violent, beginning over the solar plexus, radiating over the whole belly and finally settling in the right iliac region. In adnexal disease the pain is dull and heavy, and never sharp and lancinating until the peritoneum is involved. The patient is more alarmed in appendicitis than in disease of the adnexa. The location of tenderness is different; in appendicitis it is on a level with the anterior superior spine; in adnexa trouble it is in the pelvis. In the latter, vaginal examination reveals the site of tenderness; in the former, you can touch and move the organs in the pelvis without producing pain. Vomiting is more common in appendicitis. Rigidity of the muscles of the abdominal wall over the right iliac region is almost always present in appendicitis, and generally absent in inflammation of the tubes and ovaries. Indeed, the muscular

rigidity and location of the tenderness, or pain, will usually decide the diagnosis, but in case of doubt I would give chloroform and by its aid the enlarged and tortuous appendix can be felt, probably fastened in its place by adhesions; or, by a bimanual examination, we may discover disease of the adnexa. In cases of pus-tube on right side I believe the appendix, whether diseased or not, should be removed, when the pus-tube is taken away.

6. Technique of Operation.

In fulminating cases the abdomen should be opened by a long incision, the gangrenous appendix ligated and cut off, and the belly washed out with gallons of sterilized water. Six or eight strips of iodoform gauze should be carried through the incision to different parts of the cavity. The wound should not be sutured, but every facility afforded for easy drainage. If such a case is not seen until the bowels are distended with gas, and the patient prostrated or collapsed, it is useless to operate. I have never seen a case of fulminating appendicitis without premonitory symptoms. A careful inquiry into the past history will always show former attacks, which, possibly, however, at the time were not recognized.

In cases where there is a deep-seated localized abscess it should be rendered accessible by a free abdominal incision. The abscess should be carefully walled off from adjacent tissues by pieces of gauze and then opened. The pus should be sponged out and the appendix carefully searched for and removed. The abscess wall should be dissected out and the bowels examined to see that they are intact. It is impossible to treat such cases extraperitoneally, and when you have exposed the cavity to the danger of infection, there is no more excuse for doing incomplete work than in other forms of abdominal surgery. Such a case was No. 12.

In cases where the abscess has approached the anterior

abdominal wall and become adherent to the peritoneum I simply open and drain it, and make no effort to extract the appendix if not loose, or to remove the wall. To endanger the infection of the general cavity by too prolonged an attempt to find the appendix is not, I believe, good surgery. The temptation is sometimes right great to persist in efforts to get it, as the patient and his friends feel a sense of disappointment when told that the appendix was not found. The disappointment is almost as great as they would have when cut for stone in the bladder and told that the stone could not be found. But no amount of anxiety on their part will justify the surgeon's running the risk of bursting through the wall and exposing the cavity to infection. If the wall is broken from any cause, then, after sponging out all of the pus, I would remove it as you would do in case of pus-tubes. This was done in cases No. 12 and No. 22.

In cases of chronic or relapsing appendicitis I do not advise an operation until the patient has had two attacks. Sometimes the inflammation which attends the first attack renders the patient free from a second attack because of some obliterating pathological change in the appendix. I make one exception to this rule—if, several weeks after the first attack, I find tenderness or induration, or both, over the region of the cecum, I advise the patient to have the operation done at once. The operation should always be done between the attacks. In every case all adhesions should be freed, and any portion of the omentum in contact with the appendix, which is suspected of being contaminated, should be removed.

Case No. 1.—Mr. N. W. C., Richmond, entered St. Luke's March 2, 1896. Has had four attacks of appendicitis. He is a traveling salesman, and has been taken on each occasion while traveling in a railway car. Because of persistent tenderness in the right iliac region, and fear of

an attack when out of reach of a surgeon, he asked to have the appendix removed.

The appendix was found adherent to the cecum, and fastened like a strap over the bowel; a piece of omentum was adherent to it. The adhesions were undone after much trouble, and the appendix removed. No drainage. Made a good recovery.

Case No. 2.—Miss G. M., Richmond, has had repeated attacks of appendicular colic. The pain in all of the attacks has been very violent, and on each occasion required the use of morphia. In the last seizure, morphia failed to give relief, and I resorted to chloroform, keeping her under its influence for several hours. As there was good reason why neither my son nor I should operate in this case, Dr. Joseph Price, of Philadelphia, kindly performed it for me in St. Luke's Hospital. The appendix was easily found and removed. There were no adhesions. The organ was inflamed, thickened, and at one or more points its lumen contracted. Completely recovered.

Case No. 3.—Miss R. B. W., aged nineteen, of Orange county, Virginia; patient of Dr. Rowe. History of two severe attacks of appendicitis; the last one confined her to her bed for several weeks; never has been free from pain since last attack; had constant tenderness, with slight exacerbations of almost daily recurrence; cannot stand up straight without a sense of something pulling her down.

The appendix was adherent by its tips to the cecum, and sharply bent on itself. Removed it in the usual way. Recovered without any interruption.

Case No. 4.—Mr. X., of Gayton, Va., admitted to the Virginia Hospital March 18, 1896; patient of Dr. R. T. Davis. Two weeks ago recovered from his third attack of appendicitis; the last attack attended by pain, fever, swelling, some tympanitis; was in bed two weeks.

Operated before the class; found the appendix tortuous,

enlarged, and filled with foul-smelling pus. No drainage; speedy recovery.

Case No. 5.—Mrs. J., of North Carolina; patient of Dr. Sorrell; entered St. Luke's March, 1896. Has been an invalid for several years, with inflammation of the adnexa. Along with the constant pain accompanying this condition, has had many violent attacks of severe pain, fever, tympanitis, swelling in the right iliac region, vomiting, etc. Diagnosis: pus-tubes and chronic appendicitis. Took large quantities of morphia, partly for the pain, and partly from habit. Found pus-tubes on both sides, which were shelled out with some trouble. The appendix was six inches long, attached to right tube. A piece of omentum was attached to the appendix. This last was detached, tied, and cut off. The appendix was removed. Drainage with gauze for three days. Gave her $\frac{1}{4}$ grain morphia every three hours first day after the operation, and gradually lengthened this interval. She recovered without much trouble, is well, and free from the opium habit.

Case No. 6.—Miss N. B. C., aged seventeen, came from a large boarding-school in Staunton, Va., and entered St. Luke's March, 1896. Her physician, Dr. Atkinson, diagnosed appendicitis. When she arrived in the hospital the right flank was hard and swollen, the legs drawn up, pulse rapid, temperature 104 1-5. Her nervous condition was so bad, and she looked so like dying, that I ordered turpentine enemas, opium, and hot-water cloths to her belly. She improved at once after her bowels were emptied. Day after day she got better, until in a week she was almost free from pain, swelling, and fever. In the iliac region there was still tenderness and hardness. After she had been in the hospital a week I operated, and found only a few fragments of the appendix, which I scraped away. The cecum was tightly fastened to the iliac fossa, and was loosened with difficulty. Under the cecum was found the

abscess. It was cleansed, curetted, and drained with iodoform gauze. Her recovery was slow, but perfect.

Case No. 7.—Mr. A. B., aged twenty-five; admitted into the Virginia Hospital March 29, 1896. Has had some marked attacks of appendicitis, the last one month ago. Besides the severe pronounced attacks, he has had several minor spells. While quiet, he is free from suffering, but any attempt at exercise gives pain. The tenderness on pressure is constant.

Operation before the class. Found stricture near the cecum, lumen entirely occluded, and distal end filled with pus. No adhesions of any note; no drainage; speedy recovery.

Case No. 8.—Mr. W. W. B., of Charleston, W. Va., railway conductor, was admitted to St. Luke's Home March 8, 1896. He has had two violent attacks of appendicitis attended with pain. Both attacks came on very suddenly when he was on his way from his boarding-house to take charge of his train. The attacks were attended by great pain, requiring free use of morphia. He had high fever in both cases. The tenderness in the right iliac region still continues. I find on palpation a well-marked induration in the iliac region with great tenderness. I operated on him March 12th; found the appendix very large and long; down in the pelvis and attached closely to the pelvic walls. I had to peel it out with my fingers as I would a pus-tube. Indeed, it felt to my fingers very much like the ordinary pus-tube. When I brought it out of the wound, there came out with it a piece of omentum fastened to it so tightly that in separating it, I ruptured the tube, and some slight amount of pus escaped. Fortunately it was then on the outside of the abdomen. The whole structure seemed to be deprived of peritoneum, so that I could not make a flap of the serous membrance to cover the stump. I tied it off and applied very freely to its exposed surface

the thermo-cautery. Introduced some gauze drainage and closed the wound. His physician was Dr. Tinker, of Athens, Ohio. His recovery was complete.

Case No. 9.—Mrs. W. K. B., of Richmond, Va., aged thirty-seven, was admitted into St. Luke's April 10, 1896. Has had attacks of pain in her right iliac region for twenty years. At one time I believed the trouble was ovarian, and treated her with electricity, the local use of iodine, and internal administration of anodynes and alteratives. Lately the attacks have resembled appendicular colic, and she insists that the pain is different in character from that she formerly had. The appendicular attacks have been coming at shorter intervals and more severe; none of them, however, attended with fever until the last attack, when she had marked fever, rigid abdominal walls, and great pain; the attack lasting for a week. Indeed, she never got over the last attack, as she had constant pain and stiffness in the right iliac region. I operated on her April 10th; found the appendix fastened to the omentum and to the right broad ligament. Its attachments were strong, and I had to dig them out with the blunt end of a pair of forceps. When removed, the lumen of the appendix was found occluded about half way from its tip to the cecum, and contained in its free end half a drachm or more of bad-smelling pus. The right fallopian tube was large, inflamed, and red, the ovary had undergone some cystic degeneration. The tube and ovary on that side were removed. The left tube and ovary were sound; no drainage; recovery uninterrupted.

Case No. 10.—Mrs. C., aged thirty, admitted to Virginia Hospital March 10, 1896, has had repeated attacks of appendicitis. The last one kept her in bed for six weeks. Operation done before the class; appendix enlarged and thickened and fastened to cecum; made two holes in the cecum in dissecting it away, which were closed with fine silk sutures. Appendix contained two hard concretions like

cherry stones, but were really composed as usual of fecal matter. No drainage; recovery uneventful.

Case No. 11.—Mr. S. S. D., of Macon, Ga., aged twenty, was admitted into St. Luke's Home April 25, 1896. This gentleman had a violent attack of appendicitis eighteen months ago while in London, with perityphlitis, which kept him in bed for two or three months. He was exceedingly ill there, and at one time his physician thought he would die, but he improved sufficiently to be put on the steamer and brought home. About eight months afterwards he had a second attack at Macon, Ga., about as severe as the first. Since that time he has had repeated attacks of pain in the region of the cecum, necessitating sharp purging and occasional application of leeches, poultices, etc. He came to see me six months ago, and was so entirely free from any remnants of the former attacks that I decided to let him alone, and sent him back home. After he returned home, however, he had several pretty sharp attacks, and came back. After reaching Richmond he stayed with his sister, and again for a month was free from any soreness in that region. A day or two after, however, great soreness came on, and his suffering was very severe. I opened his abdomen April 25th, making the incision over the region of the cecum. Found the cecum intimately adherent to the iliac fossa and evidence of great inflammatory deposit there. The ileum for several inches was fastened to the cecum and attached by bands to the posterior abdominal wall. All these attachments were broken up and the appendix was found in its usual site, but nothing but the stump was left. No trace of it except this little projection of about half an inch could be found. At this writing, May 1st, he has not had a bad symptom. The operation occupied one hour and twenty-five minutes. His physician was Dr. Mettauer, of Macon, Ga.

Case No. 12.—Mr. D. P. S., of Staunton, Va., aged thir-

ty-eight, was admitted into St. Luke's Home May 20, 1896. Acute appendicitis. Was taken ill on May 16, 1896. Suffered terribly on the 17th, 18th and 19th. Came to me on the 20th saturated with morphia, of which he had taken frequent hypodermics. Fortunately, he had been pretty well purged. He had all the symptoms of the formation of an abscess of the appendix.

I operated that night; found the appendix gangrenous and sloughing, and a large abscess, which I peeled out as you would do a common pus-tube; sprinkled iodoform thickly in the site of the abscess cavity, and drained with both glass tube and gauze. His recovery was slow but complete.

Case No. 13.—Mrs. O. S., of Richmond, Va., aged twenty, was admitted to the Virginia Hospital October 10, 1896. She had been an invalid since the birth of a child some months previous, and suffered pain over the region of both ovaries, that on the right side being the most constant and acute.

The abdomen was opened to remove the diseased organs, and the appendix was also found to be involved. It was thickened, inflamed, and adherent to the right fallopian tube. The tubes, ovaries, and appendix were all removed, and the patient made a quick recovery, and has since remained free from symptoms.

Case No. 14.—Miss K. R., of Richmond, Va., aged twenty-eight, was admitted to the Virginia Hospital November 28, 1896. History of gonorrhea, and several attacks of peritonitis. Ovaries tender, and tubes as large as sausages.

When the belly was opened, and numerous adhesions separated, the appendix was found fastened to the right ovary and buried in a mass of lymph. It was removed, along with the diseased adnexa, and found filled with mucopus. Prompt recovery.

Case No. 15.—Mrs. W. R., of Looney, Va., aged forty, patient of Dr. Givens, was admitted to the Virginia Hospital December 19, 1896. She had an ovarian tumor, which distended the abdomen to the size of a woman pregnant six months. An operation for the removal of the cyst found the appendix firmly adherent to its walls, and distended with muco-purulent contents. The tumor and appendix were both taken out, and the woman recovered, and went home well.

Case No. 16.—Mr. I. J. M., of Richmond, Va., aged thirty, was admitted to St. Luke's Home January 6, 1897. He has had repeated attacks of appendicitis, some of them violent, and attended with fever. The last one was about four weeks ago, and the most severe one he had had.

I opened the abdomen; found the cecum and appendix bound down with innumerable adhesions. I had to dig out the appendix with my fingers, and sometimes to use the scissors and knife. Pus found in it. He did not do well after the operation. He took chloroform so badly that at one time I had to raise the window and give him fresh air. The weather was cold, and he took cold on the table, and for a few days was threatened with pneumonia. He had a violent, persistent cough, jerking in this way at the stitches so that every stitch-hole suppurated. In this way the healing was delayed. His recovery was slow, but complete.

Case No. 17.—Mr. J. L., of Richmond, Va., aged thirty-five, was admitted to St. Luke's Home January 6, 1897. Has had repeated attacks of appendicitis, without knowing what the trouble was. He is a patient of Dr. William S. Gordon, who called me to see him in consultation on the night of the 5th of January. From the patient's report and that of his wife that night, he seemed to be better than he was the day before. He is a phlegmatic individual, and difficult to get any information out of, so Dr. Gordon and I

decided to let him alone a few hours longer. In coming out of the house with my hat and overcoat on I met his stepmother, who told us that he had had a severe chill about three o'clock in the morning of that day, followed by intense fever; this succeeded by a drenching sweat; this by complete ease and sleep; information that we had not been able to get out of the patient or his wife. We then decided to operate at once. He was removed to the hospital, and the operation was at once performed.

The appendix was enlarged, and about as big as my index-finger, soft, containing fecal matter and pus, with patches here and there of mortification. I shelled it out of its bed without bursting it, and removed it in the usual way, applying the thermo-cautery to the stump, and dusting the site that the appendix had occupied in the cavity thickly with iodoform. The man was septic from the dead and dying appendix; showed it by his rather rapid pulse, yellow skin, and delirium at night. Purging, however, got him out of this, and he made a good recovery.

Case No. 18.—Mrs. M. L., of Huntington, W. Va., aged forty-five, was admitted to the Virginia Hospital January 9, 1897. She has had numerous attacks of relapsing appendicitis, distributed over the last fifteen years, and was thoroughly incapacitated for work. She was operated on in a public clinic, and the appendix, which was found inflamed and adherent, was removed. She made a tardy convalescence, owing to an attack of grippe; was discharged from the hospital after six weeks, and is now well.

Case No. 19.—Mrs. J. G. D., of Tennessee, aged twenty-one, was admitted to St. Luke's Home January 16, 1897. This lady had been married a month, and was on her bridal tour through Florida when she was suddenly taken with appendicitis, and her husband brought her here.

I operated on her the evening of January 16. This was certainly the third, possibly the fourth, attack the lady had

had. Found the appendix matted down by many adhesions. I removed it, however, without much trouble. It showed marks of old and recent inflammatory changes. Recovery uninterrupted.

Case No. 20.—Miss J. C., of Childrey Store, Va., aged twenty, was admitted to the Virginia Hospital January 16, 1897. She had suffered great pain in right side for years, and was bedridden.

She was operated on before the class, and the appendix and right ovary found inflamed and amalgamated. Both organs were removed, and the appendix was found constricted at its base and filled with a gelatinous material. Easy convalescence.

Case No. 21.—Mrs. N. J., Staunton, Va., aged thirty-six, was admitted to St. Luke's Home January 21, 1897. She had been confined to bed for six months with attacks of abdominal pain. Her physician felt compelled to use morphia very freely, and she soon refused to do without its daily use. She had a child two years ago, and no special trouble at its birth. She denies being pregnant now. Complexion is like a piece of leather, is emaciated to the last degree and scarcely speaks above a whisper; lives on beef extracts and suffers almost constantly with nausea; has occasional attacks of violent pain, located usually about the umbilicus. The attacks are accompanied with vomiting and tympanitis; no more tenderness over one iliac region than other, but very marked increased muscular tension on right side.

Made the opening in the middle line, as the diagnosis was not clear; found uterus three months pregnant, tubes and ovaries sound, and appendix bent, swollen and filled with stinking pus. Recovery was uneventful. She gave up the morphia habit, and is now well and in the eighth month of pregnancy.

Case No. 22.—Master S. G., of Richmond, Va., aged

five, was admitted to St. Luke's Home January 27, 1897. This little boy was brought in by Dr. Stuart McGuire, with acute appendicitis.

Found the abscess containing about a tablespoonful of pus, and the appendix so rotten that it broke in a number of pieces on being removed. The wound was left open, no stitches used and the site of the abscess packed with iodoform gauze. He did well for twenty-four hours, then became restless and was beyond all control—crawled all about the bed—laid on his back, side or belly, as he pleased. He was purged the day after the operation by a dose of calomel. The second day we gave him one-sixteenth of a grain of morphia, which was repeated at short intervals, and he presently became quiet. Discharged February 13, well.

Case No. 23.—Mr. L. R., of Island Ford, Va., aged twenty, was admitted to St. Luke's Home February 6, 1897. He has had two severe attacks of appendicitis; the last one came on while he was in Basic City. Treated by his local doctor with opium and sent to me, as the case was subsiding. When he reached me I waited a few days for all inflammatory symptoms to disappear and all danger of sepsis was passed.

I opened the abdomen February 12 and found the appendix fastened down by a large number of adhesions; bowels were adherent one to the other, but the adhesions were easily unloosed and undone. The appendix was occluded, inflamed and contained a small quantity of pus. No drainage. Recovery was without interruption. His father, Dr. Richards, of Rockingham county, writes me that he is well and at work.

Case No. 24.—Mr. H. C. W., of Lynchburg, Va., aged twenty-five, was admitted to St. Luke's Home February 8, 1897. Has had five attacks of appendicitis; last one about three or four weeks ago. Each attack seemed to get more

and more violent. Slightly tender now over the region of the appendix.

Operated on him Friday, February 12. Found the appendix adherent; had to dig it out of a mass of inflammatory deposit. The appendix was enlarged, with stricture; contained a large quantity of bloody, bad-smelling, dark-looking fluid. No drainage. His recovery was complete.

Case No. 25.—Mr. C., New Haven, Conn., aged thirty, was admitted into the Virginia Hospital February 16, 1897. He is a patient of Dr. Edward McGuire; was taken ill three days ago with violent pain, tenderness and muscular rigidity in right side, tympanitis, etc. His physician purged him fully with Epsom salts and the symptoms abated. In a few hours the pain returned; pulse was rapid, face anxious, muscular tension decided.

Operated at his physician's request; found appendix swollen, enlarged, dark and gangrenous in places. It was filled with black, stinking fluid of some kind. At the time of operation temperature was 99 degrees. So urgent was this case considered that I decided to operate at 2 p.m., and not wait for his father, who was expected to arrive in Richmond at 7 p.m. the same day. Gauze drainage was freely used, and a large part of the wound left open. His recovery was uneventful.

Case No. 26.—Mr. G. was admitted to St. Luke's Home February 27, 1897, with an acute attack of appendicitis, which had been going on for fourteen days. I was out of the city, and the operation was deferred until the day after he arrived in the hospital.

Found on opening the abdomen such a mass of disease as I have never seen before in such cases. The appendix was not certainly found. Cut away a mass from the omentum which was supposed to contain the appendix with inflammatory deposits, but I was not sure of it; the parts were so disorganized that I could not tell. Separated a

number of adhesions, and packed with iodoform gauze for drainage, but the sepsis under which he was laboring when I operated continued, and after six days he died. The death of this man was due to procrastination.

DISCUSSION ON DR. M'GUIRE'S PAPER.

Dr. Samuel Lloyd, New York: Mr. President and Gentlemen—I thought I had been fully repaid for my trip to Georgia before this morning, and I thought I was going back to New York with sufficient information to make up for the trouble and time of coming here; but I am more than pleased to be able to remain and hear Dr. Hunter McGuire's valuable contribution to the subject of appendicitis. The only difficulty with Dr. McGuire's paper is, that he has left practically nothing for the rest of us to say. He has so exhaustively treated the question and in such a succinct and distinct way, that really it is almost a work of supererogation for one to attempt to discuss it. I was very well pleased with his reference to the operation during pregnancy, and I agree with the statement made by the reader of the paper that pregnancy should not contraindicate operation in these cases. It is more important to run the risk of loss of the fetus, than to run the risk of the loss of both mother and fetus, which we should do if we left a suppurating appendix in the abdominal cavity. We will find, in all probability, as the doctor has found, that the cases will not go on to miscarriage or abortion following this operation.

One point that has not before been thoroughly emphasized, and which the doctor brought out plainly in his paper, is the necessity of the removal of the appendix in cases where an infected pus tube is present on the same side. There can be no doubt of this on the part of those who are thoroughly acquainted with the pathology of the condition, when we remember that the lymph current from the septic tube and ovary follows along the appendiculo-ovarian liga-

ment, and that a secondary appendicitis has been frequently known to occur following the infection of the tube, and consequently, particularly if there is any enlargement of the glands, it would be an important thing to remove the appendix in order to get rid of the sepsis. It occurs to me, too, in connection with the infection, and also in connection with another point made by the author of the paper, whether we may not find a similar course of infection in the male which may perhaps account to a certain extent for the increased frequency of the disease in male patients. Unfortunately morality in the male has not reached quite as high a pitch as in the female, and it is not an uncommon thing to find, if the male has acquired and suffered perhaps several times with infection of the urethra, that there is caused an uncomfortable and rather common disease. It occurred to me some time ago in consequence of a series of cases I had following gonorrhea, whether it was not possible for that to account to a certain extent for the increased frequency and the anatomical conditions of the increased caliber of the appendix. In order to determine that, I have been having a series of dissections made to determine the conditions we may find in the lymph channels running along the caput coli and from the deep urethra. This was admirably illustrated in a case that came under my observation in the hospital a few days ago.

A young man from Tennessee came on to New York to be operated on, having had four or five attacks of appendicitis. After questioning him for some time I found that the first attack had followed shortly after a gonorrhea, and that he had then had no symptoms of gonorrhea from that time till the time he was admitted to the hospital. He had had no sexual connection for three months preceding the final attack which brought him to New York City for operation. The appendix was removed, and there was found a series of large lymph nodes running from the ap-

pendix and down connecting with the deep iliac glands. Three or four days following the operation a purulent discharge from the urethra began, and we found the gonococci quite liberally distributed throughout the discharge. We could not localize the gonococci along the appendix, but that does not necessarily follow with our present ideas of the pathology of the condition, because we know the enlargements are more often due to the toxins of the bacilli than to the progress of the bacilli themselves throughout the lymphatic system.

Another point the doctor emphasized with importance, the fulminating cases that we get, and which are so frequently put down as original instances of appendicitis. I agree with him fully in his statement that the fulminating cases are simply secondary attacks, that there have been previous attacks of the disease that have either been overlooked or forgotten, and the fulminating attack is nothing more than a recurrence of the old invasion of the appendix itself.

We must agree also with the idea of not attempting to remove the appendix in cases where it is agglutinated, walled in by a mass of inflammatory tissue. To expose the general peritoneum to infection, where it is protected by a wall of inflammatory lymph and adhesions between the intestinal coils, would to my mind be very bad surgery. I had a striking instance of that not long ago in the case of my own assistant, who was taken with an attack of appendicitis, and although operated on as soon as it was possible to do so, the appendix was found bound down at the bottom of the cavity and an immense abscess cavity was opened. We washed out four concretions from the abscess and were unable to find the appendix. I was assisted in the operation by Dr. Bull, of New York, who agreed with me that to get the appendix out would be to expose his whole abdomen, and we left the matter as it stood. It was grati-

fying a few days later to find that the greater part of the appendix had sloughed, came out through the wound, and the young man was out of bed. The wound was left open and became absolutely healed within three weeks. My invariable experience is that those cases do better, get better more promptly and seldom have a recurrence where the abscess has gone on to the probable destruction of the appendix. Besides, I would rather do a secondary laparotomy with the first indication of a fresh invasion than to attempt to remove the tube at the time when the inflammatory and septic conditions were present.

There is one point about which I do not feel quite as certain as the reader of the paper seems to be, and that is with reference to the number of cases that get well. I read a paper only a few weeks ago in New York, giving a tabulated series of cases of appendicitis that have come under my observation within the last two years which were not operated upon, cases in which the operation was declined, and where it was impossible consequently to remove the center of infection. These cases were supposed to be cured by the physicians who had called me, and in several instances my judgment was severely criticised in having recommended operation in the cases of two or three gentlemen who were not in favor of operative procedures in appendicitis. In twenty-five there were but three cases that did not recur afterwards. Since that time one of these cases has had a recurrence, reducing it now to two who have gone any length of time without recurrence. The cases have been followed for several years and kept track of constantly. I am confident that if we all follow these cases and keep them under observation for a period of years, we will find the number of cases that are actually cured will be considerably decreased.

I wish again to say, that I am very much pleased to have had the opportunity of opening this discussion and to thank

Dr. McGuire for having presented the subject as well as he has.

Dr. Wm. H. Elliott, Savannah: Mr. President—As a Georgian, I am glad to have an opportunity to state to Dr. McGuire what I am sure every other Georgian in this room will agree with, that it is with great pleasure that we have an opportunity to hear him and have him with us. I thank him personally for stating so clearly the very points we want to know when we are called upon to diagnose these different cases. I was particularly interested in his statement of the value and limitations of the use of saline cathartics in cases of appendicitis. When I was a student in New York a great many years ago, and was brought up to a great extent under the teachings of the late Dr. Alonzo Clark, and my dear old teacher, Dr. Metcalf, I was taught that in cases of peritonitis, which then included everything that is now called appendicitis, as well as general peritonitis, that opium in some of its forms was the sheet-anchor. I noticed in some of Dr. McGuire's cases, which I have had the pleasure of reading over, that morphia was given in some few cases before operation, and in some few of them afterwards. But I would be glad to have him state, for my own information, and that of others around me, the value and the exact limits of the use of morphia in these cases, because the question of the relative value of cathartics and morphia is one that has been agitated so much in late years.

Dr. H. McHatton, Macon: My operative experience in cases of appendicitis has been so limited that it would be useless to give my opinions when the subject has been so ably presented and discussed here to-day. I am very much pleased and gratified with the presentation of this subject by Dr. McGuire, and comparing his paper with many others that I have read on the subject, it is certainly a conservative one. It deals with appendicitis from all points of

view, which I think is very essential in this type of work for the general practitioner, as we are most of us here. A short time ago it was urged that every case of typhlitis should be operated upon immediately; then arose the question as to whether such cases should be operated on at all, or whether we should wait for symptoms. In waiting for the manifestation of symptoms we very often wait too long. Without prolonging the discussion, I wish to say that I have seen or read of nothing as definite as that which has been given us to-day as to the type of cases upon which we should operate.

Dr. W. H. Doughty, Jr., Augusta: Like the two other speakers, I have listened with a great deal of interest and pleasure to the paper of Dr. McGuire. My own experience with appendicitis has been limited, but such as it is, it leads me to indorse absolutely what he said about the selection of cases upon which to operate, and I have for a number of years been acting exactly along those lines. I have not up to this time had a single case which caused me to regret having done so. Personally I am under obligations to the doctor for his paper. I enjoyed it very much.

Dr. E. H. Richardson, of Atlanta: My views are so well known to the members of this Association on appendicitis that I do not care to say much in the discussion of the very able paper presented by Dr. Hunter McGuire, except that I rejoice that he has come here to-day and given us a paper of such signal value and on such conservative lines. I am on both sides of the question of appendicitis, that is to say, I treat my cases medically until confronted by symptoms demanding surgical interference, and 90 per cent. of my cases treated from the beginning of the attack by absolute rest of the alimentary canal secured by opium judiciously administered, coupled with the application of leeches and emollients to the right inguinal region, and

the use of copious enemas to clear out the *prima viæ*, recover without the knife.

We all indorse the indications mentioned by Dr. McGuire demanding resort to surgery, and agree with him that the fulminating cases of the disease—happily a rare form—should be operated on *always at once*. The recurrent cases should be operated on after the second attack in young subjects. I do not think anybody will question that they should always be operated upon in the quiescent stage. It is the rarest exception for a case to die when operated on in the quiescent period of the disease. It is fashionable to use salines in the treatment of the disease,—I occasionally administer them,—but in my experience their use has often enhanced the perturbation of the patient, and has increased vomiting in the vast majority of cases, which symptom is always present in appendicitis. In the great majority of instances in which I have used opium the patients have improved inside of forty-eight hours; if they are worse at the expiration of this time, as manifested by a *rapidly rising pulse*, we should use the knife without further delay. The profession is beginning to understand that the pulse is the true and only infallible index of the patient's condition to direct us when to use the knife in appendicitis. I called attention to this fact in a paper read before this body one year ago. A few months ago Dr. George Shrady, of New York, emphasized it in an article published in the *Medical Record*.

In reference to removing the appendix in suppurating cases, Mr. Treves, of London, considers it bad surgery after giving exit to the pus to fish for the appendix in order to remove it, insisting that it is destroyed by the suppurative process. The destruction of the appendix by the inflammatory process, after it has terminated in suppuration, explains the rarity of second attacks of appendicitis after suppuration has occurred. Mr. Treeves also differs with

Dr. McGuire as to the number of cases that recover without the resources of surgery.

Dr. Morris advises operative interference at once, in every case of appendicitis, and during the acme of the inflammation. This is bad surgical doctrine, I think. If the case is in an active state of inflammation when an operation is performed, I do not believe the statistics that show 98 per cent. of recoveries.

I knew a doctor once who got up statistics; some of his cases were left out, he alleged, because he did not see them soon enough, others because they were negroes. The result was he counted only his live cases, and I know that he meant to be perfectly honest and fair.

Concerning the time when cases should be operated upon, Mr. Frederick Treves, in the second edition (1895, published by John Bale & Sons, London) of his monograph on "The Surgical Treatment of Appendicitis," says:

"The use of the knife will be very rarely called for before the fifth day. Surgical interference before the fifth day should not be undertaken except in the presence of very emphatic symptoms." In the same thesis on the subject of the number of cases that recover without the knife, Mr. Treves says: "The commonest form of appendicitis usually terminates in resolution and is amenable to simple medical measures. The majority of cases get well without surgical interference of any kind."

Mr. W. H. A. Jacobson, F.R.S., one of the ablest surgeons of Great Britain, in August, 1895, writing on appendicitis, makes this declaration: "A large number of the cases recover under medical treatment, probably from one half to two thirds, if wisely treated from the first. If there was anything like the same energy displayed in making a correct diagnosis early and at once enforcing absolute rest, etc., as there is in obtaining early operations,

much that has been poured forth lately on this matter would never have been written."

I would like to ask Dr. McGuire in his closing remarks to give us his views on the possibility of palpating the normal appendix, as has been announced by Dr. Morris. I would like also, if we have time, to hear Dr. Hunter McGuire's views on the treatment of enlarged prostate gland, as I consider him the ablest living authority on the subject.

Dr. J. S. Horsley, West Point: I thank Dr. McGuire personally for his paper. Personal considerations give me a strong interest in the subject of appendicitis; besides having seen quite a number of cases in my own practice, I have felt in my own family the effects of this dreaded disease. I wish to join with Dr. Elliott in asking Dr. McGuire to give us some further remarks on the uses and limitations of morphia in these cases, and I thank the doctor for his plain instructions upon the matter of the use and limitation of salines. It has been my misfortune to see several fatal cases of appendicitis, some operated on, and some not. From the limited observation I have had, I think that no risk is given a patient when an operation is performed for the fulminating variety of the disease. I do not believe any case of fulminating appendicitis will get well without operation.

Dr. Eugene Foster, Augusta: I can only say, Mr. President, in the presence of Dr. Hunter McGuire I feel my littleness. I can say that truthfully, and I beg therefore to be allowed to accord to the Association what little time is at my disposal to Dr. McGuire in his closing remarks.

Dr. L. G. Hardman, Harmony Grove: I am very sorry my friend Dr. Richardson has called me up to say something on this subject, because I feel my littleness before such a distinguished man as Dr. McGuire, and my experience has been so limited that I would be trespassing

upon the time of the Association to give it in the presence of a man of such extensive experience as the essayist.

There is one point in his paper that I feel great interest in, and that is, in reference to operating upon cases after the second attack. The reason this has interested me so much is because I had a patient a little over a year ago with a primary attack of the disease, from which he seemed to recover completely. If I mistake not, in the author's paper he stated that where there was no tenderness after the first attack, or at least where there was tenderness after the primary attack, and it continued, he operated before the second attack. The patient I speak of was a farmer, and so far as I can tell perfectly recovered. He had had no trouble whatever since some time ago, when, while at work on the farm in a ditch, he suddenly felt some uneasiness in the right iliac region and went home. The pain seemed to light up in that region and continued worse and worse, and in my absence another physician was called to see him and I did not have an opportunity of seeing him until just about the termination of the case, at which time the nausea and vomiting were continuous, but there was no elevation of temperature whatever. There was a small, wiry pulse, as has been described by the essayist. This patient only lived about twelve hours. I may state, however, that during this attack the physician who attended the man was in doubt as to whether or not it was a case of appendicitis, so much so that he thought possibly in the previous attack there must have been a mistake made in diagnosis, and that there was probably some trouble in the ureter and kidneys. He examined the urine in this case and found casts, pus and albumin. He felt sure that he had a case of pyelonephritis or simple pyelitis from renal calculi, or something of the kind, possibly extending up into the kidney and producing pyelonephritis. This is the view that he had taken of the case, especially as the temperature had

gone down so suddenly, and so he looked at the case in that way. Being called at the time, I expressed the opinion that the patient had received a blow and it was useless to undertake operation, knowing well that if we did an operation at that time it would not be successful, and would interfere with doing more work of this kind. However, after death, on opening the abdomen, we found it full of pus, and the patient had a diffuse peritonitis from rupture of the appendix, and at the spot where the rupture occurred was a small mass not larger than a pea, which had the appearance of being a very small pus sac, stored away ready to burst and produce a septic fatal peritonitis. It occurred to me as the doctor was reading the paper that if we waited and depended upon tenderness or the manifestation of any other symptom to determine an operation, that we might loose a good many cases of appendicitis. It is hard for me to decide in my own mind whether or not it is always proper to wait till after the second attack before operating. I am sure, in all probability, if this man of whom I have spoken had been operated on during the quiescent stage of the disease he would have recovered. As it was, the case terminated fatally. The features of interest in this case were the presence of pus, albumin and casts in the urine. As to what the cause was, whether it was due to a septic inflammation, to adhesions and defective drainage from the pelvis of the kidney, I do not know.

In reference to cases of appendicitis, where there is distinct suppuration and adhesions to the abdominal wall, I agree with the doctor in regard to treating them as an abscess anywhere else, simply draining the wound without making any effort whatever to remove the appendix. I might mention here that not only in cases of appendicitis but of other diseases that we find in the abdominal cavity, where we have adhesions to the abdominal wall, so that

we can get drainage and there is no danger of entering the peritoneal cavity, it is proper to do so.

Dr. George H. Noble, Atlanta: There is one suggestion in connection with this subject that I cannot accept as satisfactory, that is, the removal of the appendix, whether diseased or not, when operating for pus-tube on right side. The necessity of it has not occurred to me. I have seen a large number of pus-tubes and very extensive inflammations throughout the peritoneum—cases that were apparently solid to and above the umbilicus, a very large percentage of which have recovered, and in none did I remove the appendix. In all of the cases that I can trace there is no history whatever of subsequent appendicitis. Ordinarily, in pus-tubes, where we can completely remove the inflamed area, it is quite natural to suppose that the exciting cause, the septic material, being removed, that the danger to the appendix is also removed. It may be possible that where we do not remove all of the septic area the appendix may subsequently become affected, yet I do not think it a very great cause for alarm. It is, however, a point to which I have given no special attention and am only prepared to give clinical and not pathological evidence.

Dr. McGuire (closing the discussion): I have been very much interested in the discussion. I have often felt that when a country doctor came to see me and began pumping me about a case which he wanted to know something about, that before he left me I got out of him more than he got out of me—not a fee, but information. I have never talked to a country practitioner who had good native sense and close observation, that I did not learn something from him. I have learned some little things from him which only men who are close observers and have staid for hours at the bedside ever get, that have been of value in my practice. Practitioners in the city are too busy; they do not stay long with their patients. The city practi-

tioner does not put his horse up to feed or stay all night with the patient; he is in a great hurry to get away. He misses observations that are of value which country doctors pick up. So I have been much interested in this discussion. It has been so complimentary, however, as to embarrass me. I will answer the question of the President first.

I said in my paper that when I operated on a case of pus-tube of the right side, I took out the appendix whether it was diseased or not. I do not mean that this is orthodox surgery. I mean simply that this is what I do. It may not be accepted generally by the profession. I do it for the reason that I have had the misfortune to be obliged to operate on three cases of appendicitis after operating on the three for pus-tubes. The appendix can be affected from the outside. Therefore, I suppose, in these cases the appendix had been affected, but had shown little sign of disease until the pus-tube had been removed. I found the appendix in one case fastened to the stump of the ovary of the right side that I had removed. I do not dogmatically say it is right to do this, but it is what I do.

Dr. Lloyd says more cases of spontaneous recovery come back than I have represented. I said about one-half get well from the first attack, but we have no exact statistics what proportion of the cases come back and what cases do not. I said about one-half of the cases get well spontaneously. I suppose I was in error; I think probably two-thirds get well from the first attack. It will take a long time to settle many of the disputed points about this subject, and while it seemed a chesnut for me to talk about appendicitis at first, and perhaps a piece of impudence to introduce a subject about which so much has been written and said, yet there are plenty of legitimate differences of opinion about it, and my short address was intended more for country or general practitioners than for any other set of men. If I had been talking to surgeons I would have

discussed other points. If I had been talking altogether to a body of pathologists, I would have gone into the pathology of the appendix, but I thought it would be interesting to confine the few remarks I might make on this subject to certain practical points in which the practitioner is interested.

Dr. Elliot asks about opium. I do not hesitate to give morphia if a patient is suffering. I do not have the slightest hesitancy in doing so either before or after operation. It is altogether wrong, of course, according to the dictum of some people. It is just exactly how you use opium and other remedies. I think to give salts in a case of fulminating appendicitis would be wrong. It would only add to the trouble. To give salts after suppuration has taken place would be mischievous. To give saline purgatives during the period of lull in an ordinary case of appendicitis is very valuable. I intend to keep that up. Therefore, it is according to circumstances. Get a case suffering with appendicitis; the patient rolling in agony on the floor or bed, it being difficult to restrain him. That patient may die unless relief is afforded, and a subcutaneous injection or a small dose of morphia will do good. The dose should be small. The cry is never to give morphia. One surgeon said that milk and morphia after laparotomy means death. Well, I give them both, and my results are usually good. I operated on a child five years of age who had suppurative appendicitis. After the operation I put in a drainage-tube, and also used gauze drainage. I only put in one stitch. I wanted complete drainage. The little patient rolled over in bed and did what he pleased. When I entered the room I found the nurse holding him, saying that she could not manage him at all. I gave him the sixteenth of a grain of morphia, and after that time the little fellow went on and got well. I stopped the frightful pain the child had.

Dr. Richardson quotes from Mr. Treves on appendicitis. I would ask him to tell me the date of that book.

Dr. Richardson: The 1895 edition, Doctor.

Dr. McGuire: That is for appendicitis a good while ago, doctor. Mr. Treves has written very extensively on the subject, and I do not believe he has written anything I have not read. He has had two or three papers in the *British Medical Journal* lately on the subject. I believe he has operated oftener than any other man in England. When cases of appendicitis need an operation, they need it badly. I will give you an illustration of the urgency of operation.

I was called to see a man in Richmond only three or four weeks ago who was the son of the Professor of Surgery of Yale, who, you know, is one of the first surgeons in the land. A young doctor asked me to see the patient, saying he was very ill; that he had appendicitis; that he did not care to take the responsibility of the case, and asked me to operate for him. The patient had been freely purged and yet the symptoms did not abate. Purging had been radically done, yet the symptoms continued just as if no purging or any other depletion has been resorted to. His pulse was not good, very much like what we used to call the abdominal pulse. His temperature was 99. It was two o'clock in the day. The young gentleman received a telegram from his father to the effect that he would be in Richmond at 7 o'clock that evening. I think most surgeons would feel justified in waiting or delaying operation until the father had arrived. But I decided to operate at once, and as an excuse for the operation I did what I always do in removing the appendix: I clamped it with a pair of artery forceps just above where I cut it off so as to prevent any matter from the appendix escaping into the belly cavity. After I clamped it and cut it off, I said I would keep it in the forceps and show it to the father when he came,

and that would be a sufficient explanation for the urgency of the operation and for not waiting for him. The appendix was gangrenous. The young man got well.

Here was a case that would not admit of delay. The temperature was only 99, but there was tenderness and muscular tension over the appendix, and he had all the symptoms in his face of a man mortally ill.

But take another case. I will take the case of a girl who was brought into my hospital with a temperature of 102 1-2, delirious, belly swollen and tympanitic. She was nearly dead. It would bring surgery into disrepute by operating on such a case as this. I therefore gave her a big enema of salts, glycerine and turpentine, threw it with a long tube high up in the bowel, and it acted promptly. After that I gave her a dose of morphia. She was so much better after this was done that I waited a week before I operated on her and by that time the symptoms had nearly all subsided. So it is hard to lay down any fast rule and lines by which any of us can be governed in these cases.

With reference to the operation, I do not believe that anybody ever died from the operation for appendicitis if it was tolerably well done. I am sure nobody will die in the hands of an experienced gynecologists, particularly one accustomed to doing abdominal surgery, merely from the operation. It is the sepsis that is present before the operation that kills the patient and not the operation *per se*. The operation itself adds hardly anything to the danger.

A little boy, aged twelve, was brought to me four days before I left home, from Charlotte, N. C., by Dr. Faison. He was taken with a violent pain in the region of the appendix three days before. The first day his temperature was 104, pulse 120, constipation insuperable. This was Monday morning. This condition continued all day Monday, but Tuesday he got a little better. Wednesday the boy grew worse again, and was brought to my hospital

profoundly comatose. His temperature then was 103, pulse 150. I opened the abdomen, found the appendix and removed it, and for the first time in my life I found a foreign body in this organ. This was a little piece of apple skin, rolled up and stuck in the appendix. Besides the apple skin there was a small bit of fecal matter. The tip of the organ was swollen hard, there was no suppuration. There was really very little evidence of inflammation, certainly not enough to account for the violent symptoms, and in my mind there is a question of how much the nervous system has to do with all of this. More I expect than we know of. The little boy, a few hours after the operation, had his bowels move spontaneously, and when I left home he was getting well.

I am very much obliged to you gentlemen for your great kindness and attention.

20 mt

AN ACT TO CREATE A COMMISSIONER OF HEALTH AND DRAINAGE FOR THE STATE OF GEORGIA.

By J. C. LeHARDY, M.D., Savannah, Ga.

Mr. President and Fellow Members of the State Medical Association:

Gentlemen:—I offer to-day, for your consideration and discussion, the following draft of an act to be presented to the next legislature, entitled:

An Act to create a Commissioner of Health and Drainage for the protection of life and the preservation of health, and the prevention of disease, in the State of Georgia.

Section 1. Whereas, The interests of the people of this commonwealth require the enactment of some law for the preservation of the public health and for the thorough drainage of malaria-laden lands and swamps; therefore be it

Resolved, By the General Assembly of the State of Georgia, that within thirty days after the passage of this act, the Governor shall appoint a Commissioner of Health and of Drainage for a term of four years, who shall be a physician of skill and experience, the graduate of a chartered school of medicine in good repute, and who shall be indorsed by the State Medical Association, who shall have control of all matters pertaining to public health in the State, and who shall supervise the drainage of lands and of swamps, whenever the use of convict labor is called for by the authorities of any county in the State and the same is granted by the Governor thereof.

Section 2. There shall be provided in the capitol of the

State, an office to be known as "Department of Health and Drainage," which shall be supplied with such furniture, books and stationery as may be needed to carry out the provisions of this act.

Section 3. The Commissioner of Health and Drainage shall be provided with a secretary of his own selection, who must be a physician of good repute and well versed in State medicine. He shall perform all the duties pertaining to his office and assist the commissioner whenever called upon to do so. Both the commissioner and his secretary shall devote all their time to the performance of the duties set forth in this act.

Section 4. The pay of the Health and Drainage Commissioner shall be three thousand dollars ($3,000.00) per annum, and his Secretry shall receive fifteen hundred dollars ($1,500.00), together with their necessary traveling expenses, to be paid out of the State Treasury.

Section 5. It shall be the duty of the Commissioner of Health and Drainage to inform the authorities of every city and town, and the ordinary or commissioners of every county in the State, of the provisions in this act, and to request their co-operation in the work of removing the local causes of disease; in preventing the spread of epidemics among men or animals; in ascertaining the prevailing diseases and the causes of mortality; in obtaining records of births, marriages and deaths in every city, town and county, and in getting reliable information relative to the area of undrained lands and swamps, their condition and the effect they have upon the health of the inhabitants. He shall, when called upon to do so, by the authorities of any county, city or town, repair to such point as soon as practicable and render such assistance as may be in his power to do, in carrying out the provisions of this act.

Section 6. It shall be the duty of the municipal authorities in every city or town in the State, of the ordinaries or

commissioners of counties and of grand juries, to advise the Health and Drainage Commissioner of the State, upon all matters relating to the promotion of health, the safety of life, the prevailing diseases and the causes thereof; to apprise him of the existence of nuisances capable of affecting public health; to report, as far as practicable, the births, marriages and deaths, and to give the area of undrained lands and swamps in their respective counties. It shall be their imperative duty to apprise him of the nature and extent of any epidemic disease that may occur among the people or domestic animals, and to call upon him for help in preventing the spread of epidemics and in draining marshy lands and swamps.

Section 7. It shall be in the power of the Commissioner of Health and Drainage, when called upon by the municipal authorities of cities or towns, by the ordinaries or commissioners, or grand juries of counties, or in case of a great emergency, to drain malaria-laden lands or swamps, to remove nuisances affecting the public health and to use the State convict labor, with the assent of the Governor, and to get transportation for said labor; it shall be his duty to supervise the work done by them, and in case of the occurrence of an epidemic disease breaking out among men or animals, in any county of the State, it will also be his duty to repair to the spot and give all the help he can to prevent the spread of the disease and to assist the stricken community.

Section 8 repeals all conflicting laws.

I believe that every member of this Association, and I may perhaps add, every intelligent person in the State, feels that the sanitary interests of our commonwealth should be cared for and attended to by some competent and trustworthy person, ready to give his help and counsel when and wherever needed. Such a commissioner, with the cooperation of the counties, and with the State convict labor

at his disposal, will be able to redeem large areas of land, that are now beds of malaria, unfit for habitation or cultivation, and by proper drainage convert them into healthy and productive farms.

During the last twenty years several attempts have been made to secure a Board of Health for Georgia; but Boards of Health are not popular with our legislators, and for this reason these attempts have always failed. Therefore it is, that I propose to place the important matter of health and of drainage in the hands of a commissioner, do away with the complex machinery of a board, and at the same time reduce the expense to a minimum. While it may appear that the responsibility is too great for one man, yet when we consider that Boards of Health are generally managed by their executive officer, the other members dividing the responsibility only, it will be readily seen, that if this responsibility rests entirely upon one, the work will be more thoroughly and carefully done.

The opposition to the formation of a State Board of Health has always been instigated by parties interested. One of the bills had already passed through the Senate and there was every prospect of its passing the House, when, through the influence of one individual personally interested in the convict labor, the majority voted against it. In 1893 the opposition came from municipal health officers, because they feared the curtailing of their petty authority.

Mr. President and gentlemen, the curtailing of this authority will be a very important prerogative of the Commissioner of Health. Municipal health officers sometimes are too arbitrary, sometimes they are too timorous and some are too ignorant, and for one or the other of these reasons, they entail immense commercial losses upon a city or town, by the enforcement of unnecessarily rigid quarantine (as is now the case in Savannah); unnecessary loss of

personal effects, when, at the termination of a case of contagious disease, these are destroyed by fire, instead of being disinfected; loss of personal liberty, the arresting of persons and their detention for ten days or longer because they come from a place infected, or suspected to be infected, with yellow fever, a disease, the incubation period of which is only one to five days. In 1893, upon the report of the existence of one case of yellow fever (a disease which is not contagious) at Brunswick, one hundred miles or more away, quarantine was immediately enforced in various cities and towns in this and other States, and this quarantine was kept up, although there was no fever in that city. It was during this period that persons were arrested and sent to the pest-house. Here they were compelled to boil every stitch of their clothing, and they were detained for ten days or longer at the pleasure of the health officer. Loss in trade and in comfort by the needless enforcement of land quarantine between this and that State, between this and that town; requiring free-born Americans to carry passes countersigned by the local health officer or by some officer of the marine hospital service! Upon the report that two cases of yellow fever had occurred at Pensacola, quarantine was declared, and all communication stopped with that city. A few days later these cases were declared not to be yellow fever. The existence of a case of suspicious fever being reported to the supervising surgeon-general of the marine hospital service, as having been discovered in Tampa in 1893, immediately local health authorities declared that city to be under strict quarantine, and this farce was kept up until the State Health Officer of Florida announced that the case was one of bilious fever.

This Health Commissioner should be selected by the State Medical Association, because one capable of filling such an important office, should have not only a high standing in the medical profession, but should also be well-versed

in State medicine, in all matters pertaining to sanitation and the laws regulating quarantine. Such a man will not abuse his authority, neither will he permit the abuses and losses already detailed. By placing the supervision of the drainage of the State under his care, it will enable him to reduce malarial diseases to a minimum, not alone in the flat and swampy sections along the coast, but also higher up in the rolling country and among the hills and mountains of our beautiful State.

One very important part of his duties will be to personally visit every county in this State, acquaint himself with its topography and diseases, and to instruct county officers in the ways of collecting reliable vital statistics. To urge upon the authorities of cities, towns and villages the adoption and enforcement of sanitary laws and measures most likely to improve the health of the inhabitants and to diminish the mortality.

By these means he may be able to furnish us with reliable statistics of births, marriages and deaths in every county of the State, and by his constant attention to the drainage of her swamps and to the other duties of his office, make Georgia one of the healthiest States in the Union.

Can the medical profession of the Empire State lag behind in matters pertaining to hygiene? Will they permit the end of this century to come without securing some sanitary protection to our women and children? I hope not.

PUERPERAL SEPTICEMIA; ITS CAUSE AND TREATMENT.

By J. D. CHASON, M.D., Iron City, Ga.

It has been well said that the best treatment for a disease is its prevention, but despite all our preventive measures that science can bring to bear in our art, we are still called upon to treat puerperal septicemia; hence, owing to limit of time, I only enter into the cause and treatment.

Puerperal septicemia is due to a poison probably produced by microbes. The now well ascertained fact that in almost all cases, by the local use of certain drugs, we can prevent septicemia, and if it has made its appearance most effectually combat it, shows that this disease is due to a poison which enters the genitals as such, or is produced there by a substance coming in from without.

By microscopical examinations of wounds of the genitals caused in the living puerpera is found the peculiar microbe that produces the disease.

We also find the microbe circulating in the blood of the living patient, and after death it may be found in almost all the organs of the great cavities.

Most dangerous of them are said to be the round micrococci in chain-like group.

Chains of micrococci are found in the blood of those suffering from erysipelas, diphtheria, scarlet fever and pyemia. The poison that produces puerperal septicemia may be derived from different sources; such as patients affected with the same disease, patients suffering with suppuration

or decomposition of tissue, or patients affected with zymotic diseases or putrefying substances.

The contagiousness has been proved beyond a doubt by an enormous amount of evidence. The origin by suppuration was pointed out by Semelweiss in 1847, and in this country the case of Dr. Rutter,of Philadelphia,who suffered from ozena and had forty-five cases of puerperal septicemia in his own practice in one year, is one of the most remarkable instances of the kind. By close shaving of beard, close cutting of hair, thorough disinfection and change of apparel would not avert septicemia in his patients. Semelweiss showed how the poison in a number of cases was produced by the infection from the hands of students engaged in autopsies. The emanations from the decaying body of a dead rat some years ago was found to be the cause of a small local epidemic that broke out in the New York infant asylum. In the vast majority of cases, the infection takes by absorption through the wounds of the genital canal.

Depaul describes the case of a pupil midwife in the maternity hospital of Paris, who, while washing the genitals of one of her patients suffering from grave puerperal fever, felt instantly an unpleasant sensation, was taken sick on the same evening, and died on the third day with all the symptoms of the most characteristic puerperal fever. A postmortem of the case corroborated the diagnosis, and she was found to be a virgin and not at a menstrual period. Therefore a rational inference is that in this case the poison, gained access by the absorption through the mucous membrane of the lungs. The posion is mostly brought into direct contact with the genitalia by the hands of doctors, midwives, nurses, instruments, sponges, rags, cotton, oakum, or any other material brought into direct contact with the genitals, before, during or immediately after labor.

Unsanitary and unhygienic apartments or surroundings

may quite as well communicate the poison to the puerperal patient that produces infection and oftentimes death.

The patient's clothing, her skin, vagina and surrounding parts may be very uncleanly, which would furnish a source for the infection. Patients suffering from venereal diseases of any kind would be highly subject to infection. Lawson Tait, in his admirable work on gynecology, states that most puerperal patients who suffer from gonorrhea in its acute, chronic or latent stage, suffer from puerperal poisoning manifested in some way. In quite a large number of cases it will be found that fragments of membranes or placenta are retained, and especially after abortions.

Retained blood *in utero* causes the trouble in many instances, developing poisonous properties; also, the lochia may develop poisonous properties when the temperature is raised from any cause, such as malaria, etc. Therefore a fair inference is that acute septicemia is caused by absorption of an animal poison evolved from decomposing tissue or lochia.

Whether this evolution is due to micrococci, to chemical or electrical changes, is a secondary matter, except as it influences prevention. If the entrance of micrococci causes the changes, it is logically proper to seal up the vulva with antiseptic dressings, and change them only under spray; but if not we rely upon common cleanliness.

TREATMENT.

I regard a patient with puerperal septicemia in a condition strikingly analogous to that of one bitten by a snake. A poison is introduced into the blood that causes minute changes in the tissues and also produces a sharp shock to the nervous system. The patient may be prostrated by the primary depression. If this can be averted, here, as in snake-bite, the patient will recover, unless the diffuse changes have involved vital organs too deeply.

In puerperal septicemia we must stop the generation and absorption of poison, and if we can do this we need not fear the slight damage done by the poison already absorbed as a rule.

The indications for the treatment in acute septicemia are therefore threefold. First, we stop the generation and absorption of the poison; second, we must neutralize the poison already absorbed by free stimulation, and thirdly, we must increase the action of the excretory organs with a view to the elimination of the poison already absorbed and to prevent the further absorption.

For a stimulant to protect the nervous system against the shock of poison already absorbed, I use good whisky or brandy internally given every one or two hours, just as the emergency of the case in hand requires; also in doses from one half to one ounce, according to the effect produced upon the pulse, temperature, respiration, skin, etc. Patients suffering from genuine acute septic poisoning will tolerate an almost unlimited quantity of stimulants with a beneficial effect producing rest, lowering temperature and increasing activity of skin. The first attention of the physician should be directed to the cleansing of the uterus and removing clots, retained fragments of membranous placenta or tissue of whatever character that is acting as a source of infection, and to making the cavity of the uterus antiseptically clean. For the latter purpose an intra-uterine injection should be administered. A fountain syringe is the best instrument for this purpose, though the ordinary rubber ball syringe will do if the former cannot be obtained. I use a large flexible catheter for this purpose, attached to the nozzle of a syringe by means of a piece of rubber tubing, one or two inches in length, then introduce the flexible catheter into the womb. A finger should be kept at the os uteri to see that there is as ready an exit as entrance for the fluid used as a douche.

When injections are greatly needed the os will be found quite open as a rule. The solution first used is a gallon of warm water that has been previously boiled. With this the cavity of the uterus should be thoroughly cleansed. Then use one half-gallon of water previously boiled, rendered antiseptic with bichloride of mercury, 1 to 5000 and 1 drachm of iodoform. I do not use carbolic acid in the douche for intra-uterine injection as a rule, because I regard the use of it somewhat dangerous, as I have seen some very unpleasant symptoms produced by it after intra-uterine douche. In the majority of cases the patient is at once made comfortable, the temperature falls, and what is more important, the ax is laid at the root of the disease. The repetition of the intra-uterine injection depends upon the nature of the case and the effect produced. If we have reason to suspect decomposing fragments inside the uterus, the intra-uterine injection should be used every six hours until all danger has passed. When the poison is due to temporary retention of the lochia, one or two injections will suffice, though vaginal injections should be used several times a day.

Having protected the nervous system against the shock by free stimulation and prevented further generation and absorption of the poison by injections, we should next endeavor to aid the excretory organs in expelling the poison and repair the damage already done to the blood.

Calomel grs. 1, pulv. ipecac gr. 1-4, given every hour for six hours, to be followed by Rochelle salts one hour after, last powder in dram doses, and repeated hourly until bowels have moved freely. Dover's powders may be of service if there is any decided pain, as it would allay pain and produce activity of the skin. If there is any suspicion of malarial poisoning, quinine dissolved in sulphuric acid should be given freely.

In the following case, Julia R., multipara, was deliv-

ered at 9 a.m., October 6, 1896, after four hours normal labor. Everything progressed satisfactorily until October 10th. Had slight coldness followed by high fever, lasting all night. I was called to see her on the 11th, and found temperature 102½, pulse 108 per minute. Lochial discharge suppressed. I gave calomel and quinine freely and ordered vaginal injections of hot water previously boiled. Symptoms were all much improved on and during the 12th, but at midnight she again suffered with slight chilliness and high fever to follow. I saw her again on the morning of the 13th, in the following condition: Temperature 105½, pulse 132 per minute, with working of the ala nasi. I gave a vaginal douche, then washed out uterus with boiled water and followed with a small quantity of the antiseptic solution as before stated. Temperature immediately rose to 106½ F. Patient appeared almost frantic. I used morphine, whisky and phenacetin, and later used cold sponging afterwards to reduce temperature. I repeated the intra-uterine injections again in six hours, with the same effect as before, but found no flakes of membranes or shreds in the returning fluid. For the 14th and 15th I contented myself with vaginal injections. I gave quinine in doses of grs. 10 repeated every six hours, brandy given in one half ounce doses hourly, with an occasional calomel and ipecac tablet, which effectually kept the bowels well open. She was sponged occasionally with cold water, a dose of phenacetin given to lower the temperature, fed freely on eggs and milk with broths. Temperature ranged from 103 to 105½. On the night of the 15th, thinking that there must be a generation of poison in the womb with a constant absorption, I again resolved to use the intra-uterine douche with results as before stated, with an immediate rise of temperature to 106½, with quick, weak and feeble pulse, with a condition simulating that of collapse.

A number of bottles filled with hot water were used in

bed around patient, with free stimulation, which soon revived patient again, and from this time on through the remainder of her illness I contented myself with vaginal injections alone.

Temperature still ranged high on up until the night of the 17th, but brandy and quinine was pushed as before stated. Skin acted well, patient slept and rested well, appeared very stupid, but on the night of the 17th temperature had fallen to 101, pulse began to slow up, and patient's appearance was brighter, so that by the night of the 19th she was entirely clear of fever. This case is one that I regard as produced by malaria. This patient lived in a locality infected with malaria, and had had previous attacks of fever and biliousness. Garagnes recommends after the intra-uterine douche a suppository put high up into the cavity of the uterus with long dressing-forceps bent like the intra-uterine glass tube through a Cascoes speculum.

R	Iodoform	ʒ v.
	Amyli	ʒ ss.
	Glycerine	fl. ʒ ss.
	Acacia	ʒ i.

Misce paste. Divide into three suppositories, size and shape of little finger.

With this suppository I have no real experience, but am very favorably impressed, for, as before stated, I use iodoform in my antiseptic solution as a final douche. In many cases we will find pain, sensitiveness, with swelling in one of the broad ligaments (parametritis); in such cases an ice bag applied over affected parts, with iodine painted over lower portion of abdomen, with all the foregoing treatment as indicated with the particular case in hand, will end the inflammation in a few days as a rule.

As the uterus usually remains large in such cases, I give 20 minims of F. E. ergot three times a day to promote involution in the uterus. It should be used for quite a num-

ber of days. The external genitals should be kept scrupulously clean, using the antiseptic, and disinfectant carbolic acid in boiled water for this purpose, with a constant change of apparel. If headache be severe, use ice to head, and if fever remains high, sponge entire surface with ice-water. I use morphine hypodermically when there is much local pain. The foregoing is my treatment in general, except in cases as reported, when the temperature, far from reducing, rises when intra-uterine douches are used, but actually increases; then I rely upon vaginal injections and general treatment.

I do not use the coal-tar preparations much in this disease, and when I do use them, I guard them well with stimulants, because septicemia is a disease that rapidly exhausts the victim whose lot it is to be the unfortunate, and coal-tar preparations only add fuel to the flames. They disguise symptoms, lower the vitality, and allow the disease to make further inroads upon the system. I prefer phenacetin to any of the group. I use stimulants in some cases, almost unlimited. Early, vigorous and conservative treatment is demanded. Tonics, of course, are required, for the restoration of the general health, when acute symptoms have ended.

THE PRESENT STATUS OF PUERPERAL INFECTION.

By R. R. KIME, M.D., Atlanta, Ga.

The general practitioner, the obstetrician, the surgeon, the gynecologist, all are interested, directly or indirectly, in puerperal infection and its results.

Volumes have been written upon this subject, and yet its pathology and treatment present unsolved questions for future study and investigation.

This curse of woman existed in the dim ages of the past and continues to work its devastation and ruin even in the present antiseptic and aseptic era, but to a more limited extent.

Hippocrates recognized this condition and attributed it to suppression of the lochia.

Puzos,[1] of France, in 1753, attributed it to metastasis of the milk.

"If peritonitis, the fibrinous exudate was called milk; if phlegmasia alba dolens, milk had settled in the leg; if delirium, milk had mounted to the brain; if arthritis, milk had settled in the joint."

Virchow[1] considered it erysipelas of the peritoneum and designated it as erysipelas malignum internum. ([2]P. 425.)

Plouteau, in 1750, called the disease epidemic erysipelas of the peritoneum. ([2]P. 427.)

Kirkland, in 1774, contended it might be produced by

[1] System of Obstetrics, American.
[2] Ramsbotham's Obstetrics, 1847.

the absorption of putrid matters lodging in the uterus. ([3]P. 232.)

Péu states that in 1664 a prodigious number of puerperal women perished in the Hotel Dieu, attributed by M. Veson, physician in charge, to the lying-in wards being immediately over those for receiving the wounded. The women were attacked with hemorrhages, and on opening their bodies were found full of abscesses. ([3]P. 232.)

M. Tenon states in the epidemic of Paris in 1774 and '75 the lochia flowed, but did not flow in that of 1746. He did not observe the hemorrhages that occurred in 1664, that the uterus was not found dry, hard and tumefied as in that of 1746. ([3]P. 233.)

Dr. Gordon, in his treatise 1795, claimed the disease was undoubtedly produced by a specific contagion. ([4]P. 23.)

William Hunter, about 1750, said those attacked with this disease, treat them in what manner you please, three out of four will die.

Richer, about the same time (1750), claimed to have treated the disease successfully and had a right to offer his opinion. His successful treatment was: "On the first symptoms of chilbed fever, give a purge two days successively, each enough to operate three times. On the following days smaller doses were given, enough to operate once, or at most twice, and this plan was continued until all symptoms had ceased." ([4]P. 25.)

Dr. Gordon, of Aberdeen, during an epidmic from 1789 to 1792, used blood-letting as the essential remedy employed early and freely, when he took twelve ounces away the patient generally died, but when he took twenty-four ounces away at once, and during the first six hours of the disease, the patient commonly recovered. He also used purgatives. ([4]P. 27.)

[3]Cyclopedia Practical Medicine, 1850.
[4]Gooch Diseases Women, 1836.

Drs. Armstrong and Hey, about 1800, used bleeding and purgatives with great success—bleeding even a second or third time. Their purgative was a bolus of calomel grs. iii., jalap grs xxv., given at once and followed by a solution of salts in an infusion of senna, repeated until they operate freely and kept up until symptoms were quite subdued. ([4]P. 40.)

As to bleeding and treatment of this disease there were conflicting opinions, as we see from the following: Richter could almost always cure it. Dr. Wm. Hunter and Dr. Clark could scarcely ever cure it. Dr. Lowder observed every woman who was blooded died. Dr. Armstrong observed every woman that was not blooded died. ([4]P. 45.)

Meigs states: "Puerperal fever is more curable by the lancet than by any other means. It is child's play to attempt to cure the great inflammation by ipecac, by calomel, by cathartics, by opium or by turpentine." ([5]P. 618.)

He also states: "You do not carry the poison, you are merely unhappy in meeting with such accidents through God's providence."

Dr. Gordon, in 1795, believed it to be contagious and conveyed from one person to another by attendants.

Dr. Collins, Master Dublin Lying-in Hospital, in 1829, after an epidemic fumigated rooms with chlorine gas, covered woodwork and floors with chloride lime paste forty-eight hours. After this, woodwork was painted, walls and ceilings washed with fresh lime. The blankets, etc., were all scoured and stoved in a temperature of 120 to 130 degrees. After this, to end of his service, a period of fifty-seven months, he did not lose a single case. ([5]P. 593.)

Ramsbotham: "I have no doubt but that the disease is contagious." Advises blood-letting a second and a third time if necessary. Also purgation.

[5] Meigs's Diseases Women, 1854.

In 1782, Doulcet used ipecacuanha in Hotel Dieu with signal success and was rewarded by the French government; next year it signally failed.

Robert Gooch, in a work published in 1836, advised the use of the term peritoneal fever, indicating affection of the peritoneum.

The term puerperal fever was first used by Dr. Strother in 1716.

From these references you see that puerperal fever was recognized more than a century ago, by some considered contagious, that lesions of uterus, tubes, ovaries and peritoneum were recognized, and that the principle treatment was blood-letting and purgatives.

Yet no material advance was made until the time of Dr. Oliver Wendell Holmes and Semmelweis. Dr. Holmes, in 1843, wrote a paper on the contagiousness of puerperal fever, which was followed in 1847 and '48 by Semmelweis, setting forth suppuration and cadaveric poisons as causes of puerperal fever.

These papers awakened thought, study and investigation, which culminated in what is now the present status of puerperal infection, which we shall endeavor to present as briefly as possible after this lengthy introduction.

That which is accepted to-day as the pathology, causation and especially treatment of puerperal infection may be changed to-morrow.

One author of repute recently said: "In stating conclusions, I reserve to myself the privilege of changing my views to-morrow, if it seems to me new observations should make a change necessary."—*Lusk.*

With the conflicting views and rapid changes, it is a difficult task to sift out and sum up the present status of puerperal infection. Such a summary will necessarily be influenced and colored by the individual views of the writ-

er, while they may not, unless so stated, express his individual views. However, we proceed to the task and leave the subject open for your free and full discussion. The consensus of opinion seems to be drifting in favor of the term puerperal infection, so ably advocated by Dr. Garrigues, of New York, to designate the infectious conditions occurring during the puerperal state.

For convenience, classification and description puerperal infection may be divided into septic and putrid. This distinction I advocated and presented in a paper some six years since, at which time it met with strong opposition, but today it is admitted or advocated by most writers.

The severe cases of septic infection are classed as *septicemia*, while the severe cases of putrid infection are classed as *saprœmia*, a term suggested by Dr. Matthews Duncan.

Septic infection is highly contagious, inoculable from case to case, due to introduction, absorption, migration and development of micro-organisms, with the absorption of their alkaloidal development (leucomaines). The most common forms being streptococcus pyogenes, staphylococcus pyogenes aureus, streptococcus erysipelatous, gonococcus, bacterium coli commune and bacillus pyocyaneus. The streptococcus is the most active and usually destroys the other forms when present.

Putrid infection is not contagious nor inoculable from case to case, for its development there must be a nidus such as retained secretions, blood-clots, hypertrophied decidua, placental tissue, thrombi, bruised or necrotic tissue in which the saprophytic germs may find enlodgment and develop a toxin (ptomaines) which is absorbed, producing constitutional disturbance. The saprophytes, as a rule, are confined to the endometrium, not migratory, their chemical poison only being absorbed. For sake of brevity and want of

time we will consider putrid and septic infection collectively so far as possible. In both forms we may have mild or severe cases depending in septic cases upon the activity of the micrococci introduced, the resisting powers of the patients and parts involved, while in the putrid infection more depends upon amount of traumatism and retained foreign material furnishing a nidus in which saprogenic germs may develop their chemical toxin (ptomaines), thus furnishing an increased amount of toxic material. The infection is at first local, usually starting from the endometrium, but the vagina and vulva should not be overlooked as starting points of infection. Any rents or injuries to cervix, vagina or perineum are open avenues and should be guarded or closed at time of labor.

Endometritis, *putrid* and *septic*, is the most common result of puerperal infection; the infection extending, produces metritis, which may be accompanied by salpingitis, ovaritis, lymphangitis, cellulitis, peritonitis (pelvic and general), phlebitis (uterine or involving the leg); in some cases pleurisy and pericarditis may be a secondary result or sequelæ.

The constitutional symptoms depend upon the variety of the infection, activity of the germs and parts involved.

The process may become localized, pass into resolution and be absorbed, or may suppurate and abscess formation result; the latter requiring operative measures for removal or drainage, while in not a few cases an inflammatoy exudate will be thrown out more or less agglutinating the pelvic organs, with consequent impairment of their functions. Upon the prevention and treatment of these conditions much has been written and the question is yet unsettled, especially the treatment.

It is generally conceded that puerperal infection is *heterogenic* in origin, yet it depends upon the limitations

placed upon autoinfection which we have not the space to discuss in this paper.

In the prevention, rigid asepsis should be maintained, and where the chain fails, it should be reinforced by antiseptics. The patient, bedding, dressings and everything that comes in contact with patient should be rendered aseptic as near as possible and absolutely so in hospital work. It is in the prevention that most rapid advances and material progress has been made, rendering it safer now for a woman to be confined in a hospital than at her home in the city.

Many physicians of to-day can recall the day when the question of closing or abandoning lying-in hospitals was seriously considered, on account of the high death-rate and epidemics occurring in them. By the rigid enforcement of antiseptic and aseptic methods these hospitals have been transformed from places of death, destruction and sorrow to havens of peace and comfort, bringing health and happiness to many a suffering woman.

Vaginal douches, as a routine in private practice, have passed. In hospital practice, especially of the lower classes, and in private practice where there is pathological discharge, most authorities advise one ante- and one post-partum vaginal douche. After this they should never be used except when pathological conditions develop.

Intra-uterine douches should be limited to cases of instrumental delivery or where hand has been carried into uterine cavity, also when fetus is dead and decomposing and in cases of undoubted infection. When used in cases of infection some advise repeating every few hours, others limit their use to one or two douchings and discontinue, while a few condemn their use in most cases as productive of harm where organs are fixed by adhesive inflammation. Lusk states that if douches are used they should not be repeated. I am inclined to believe their use depends upon

the kind of douche and the character of the case. Strong antiseptic solution oft repeated will injure most all cases of septic infection.

Very weak solutions of carbolic acid, creoline or boric acid used once or twice in twenty-four hours, with a soft rubber intra-uterine drainage-tube left in position between douchings, will benefit if not relieve 99 per cent. of cases of puerperal infection. The douches should be used freely and hot, carried well up to fundus of uterus, *always* giving a free exit to the return flow. An ordinary male metal or block-tin catheter about No. 12 or 13, American scale, with curve almost straightened out, attached by a piece of rubber tubing to an ordinary household syringe, or simply slipped into the rubber tubing of a fountain syringe, is the best intra-uterine irrigator made. I prefer a cheap syringe as a new one and new rubber tubing can be procured for each case and avoid carrying contagion, while the metal catheter can be reboiled.

The *curette* is a very dangerous instrument in cases of puerperal infection and should be handled with great caution or left at home. Some authorities advise a thorough curetting of uterus in these cases, and then tampon uterus with iodoform gauze; others condemn the procedure. Individually, I believe the curette and tampon has killed more cases than it has saved, and that it has no place in the treatment of cases of true septic infection or septicemia. That all such uteri can be more safely emptied, if need be, by use of forceps or fingers, irrigated or drained, not by "gauze," but tubular drainage, with greater benefit to patient and the saving of more lives. I care not if "hypertrophied decidua," placental tissue, retained or degenerated endometrium be present, if they are firmly attached: more harm will come from their forcible removal by the curette than to let them remain *with free tubular drainage and irriga-*

tion of uterus. Understand, we say *free tubular drainage, not a gauze tampon.* Free irrigation by weak, not strong, antiseptic solutions. A uterus thus drained and irrigated will soon separate any adherent material and it can be removed by forceps without serious injury to patient.

Opiates and coal-tar derivatives are advised by most authors for the relief of pain and reduction of fever. *Such treatment in most cases is misleading and injurious.* They do not eliminate or destroy the poison, neither do they remove the cause of the disease. Their use adds more poison to the system to be eliminated, relieving pain and reducing fever at too great a sacrifice to vital powers of patient. Their use should be limited to cases of *extreme pain* and *very high* temperature as temporary measures until other and more efficient remedies can be used.

The keystone to success in puerperal infection is elimination and drainage, counteracting absorbed toxins and germs, checking their further development and sustaining patients by such remedies and measures as will conserve the vital forces of patient the most. I have time and again, in consultation work, seen the patient profoundly under the influence of the coal-tar derivatives, in which opiates had been used, yet the patient with high temperature, chills, etc., rapidly passing to death, which could only be averted by more rational and scientific methods of treatment. I submit the following proposition, by which I stand until I am convinced of something better. If the uterus is properly emptied, irrigated, disinfected, drained and bowels moved by salines, there will be but little use for opiates to relieve pain or the coal-tar group to reduce temperature. The pain and high temperature will be more efficiently and permanently relieved by this process of elimination and drainage than by any other means now at our command and at the same time the cause of the trouble is being removed.

Fig. 1 Soft Rubber.

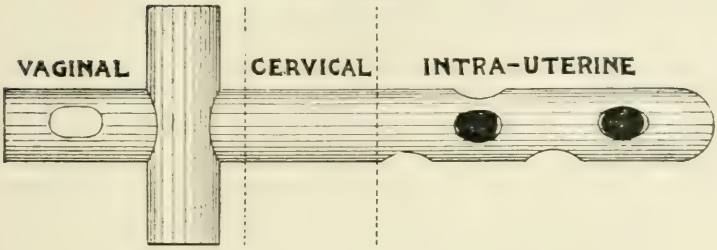
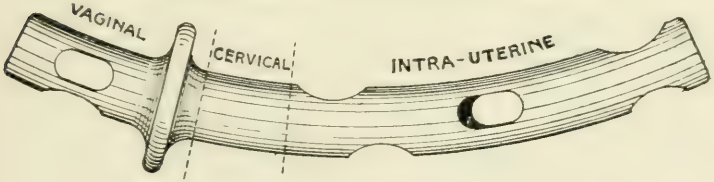


Fig. 2. Hard Rubber, Glass, or Aluminum.



Figures are half size.

The softest, most pliable and largest sized tubing the cervix wil admit should be used, with plenty of openings in the uterine portion and three openings below the cross-bar in vaginal portion, so as to secure free unobstructed drainage. The tube should be removed, cleansed and disinfected once or twice in twenty-four hours; at the same time uterine cavity should be freely irrigated with boiled water or weak solutions of carbolic acid, boric acid, creoline, or if uterus is relaxed and flabby, with tendency to bleed, weak solution of tr. iodine comp. In severe cases capillary drainage may be added by carrying a strip of gauze up into the uterine cavity along the side of and with the drainage-tube. At the same time, Epsom or Rochelle salts should be given until bowels move freely, and repeated every day or two in smaller quantities so long as needed.

After more than ten years of practical demonstration of drainage, both uterine and alimentary, in puerperal infection, I am more fully convinced than ever of its utility, and

if I could only induce the members of this Association to adopt this method in their practice I would feel that I had not lived in vain. Not only will it lessen suffering, relieve more cases of puerperal infection and save more lives than any other means now at our command, but will also prevent more pelvic complications, save more uteri, tubes and ovaries from subsequent disease, and leave them in a condition so as to perform their normal functions, which cannot be said of any other plan of treatment known to the profession of to-day.

All cases of puerperal infection should be fed systematically liquid, easily digested food, and where they fail to take sufficient nurishment, some of the prepared foods should be given.

Of medicinal remedies quinine given in 5- to 10-grain doses, about four to six hours, acts well in many cases, tending to check germ development and inflammation, incidentally helping to control temperature without detriment to patient. Strychnia, combined with bitter tonics, antiseptics or digestants, given every four hours with nourishment is beneficial in most cases.

In weak debilitated cases some form of iron should be given. Hypnotics, such as sulphonal, trional, elix. six bromides should be given if needed to procure rest or sleep. Stimulants in moderation systematically given will do good in very weak cases, yet strychnia, quinine and digitalis are more permanent and beneficial in results.

The serum treatment is now on trial and gives promise of good results, so claimed by some. To use it intelligently and scientifically will require accuracy in diagnosis and bacteriological study, as more than one germ is capable of producing puerperal infection and more than one variety may be present; *i. e.*, a mixed infection, even of micrococci, causing septicemia proper. It will be difficult for the mass of physicians away from medical centers to be able to

decide whether to use the serum for sapremia or septicemia, and especially as to when to use serum to counteract streptococci, staphylococci, bacterium coli commune, gonococci or bacillus pyocyaneus.

It is claimed that one variety of serum has no influence over infection due to other forms of micrococci.—*Hirst.*

That the serum must be used early to be of benefit, and in very virulent forms it may fail.—*Marmorcck.*

So far, the results and statistics are confusing, and more time will be required to establish the results of serum therapy in puerperal infection. There is also another factor in the treatment of these conditions, as well as in other infections and septic conditions, worthy of further investigation and study; that is, the increasing of the phagocytes and germicidal power of the blood by administration of nuclein or nucleinic acid. It is claimed that they increase the power of the blood to destroy staphylococci, streptococci and more especially bacterium coli commune. If these experiments prove true in clinical tests it will be an advance in the therapy of puerperal infection.

Surgical measures are indicated when the infection becomes localized with pus formation and some claim in general peritonitis.

Pus accumulations in broad ligaments, as a rule, should be drained through vagina by Henrotin's method, whether they be due to cellulitis, peritubal inflammation or ruptured pus tubes.

In pyosalpinx and ovarian abscess authorities differ as to whether vaginal or abdominal route is best.

Hysterectomy is advocated in cases of thrombo-phlebitis, multiple abscesses in uterine wall, etc., but is a very difficult matter to diagnose the condition requiring such a surgical procedure. Where the septic infection is so marked as to produce such serious lesions of the uterus, it has usually passed beyond the reach of hysterectomy before a

differential diagnosis can be made demanding such an operation. While the infection is rapidly progressing, I doubt the utility of such a measure, but after the infection and inflammation have become localized in uterus, tubes or ovaries, then there is time for consideration of such operative measures as are best suited to the individual case.

DISCUSSION ON THE PAPERS OF DRS. CHASON AND KIME.

Dr. C. M. Drake, Atlanta: These papers are so interesting and the subject of such vast importance, that I feel they ought not to be permitted to pass without some discussion. I have nothing to say in reference to the proceedures outlined in the papers, nor the manner of treatment, except in reference to irrigations. I have had some experience as a surgeon with puerperal septicemia, and I have had good results from irrigations with permanganate of potash, and I wish to impress it upon the members of the Association who have not tried the use of irrigations heretofore, as well as the other means to overcome sepsis contained in the uterine cavity. I agree with the essayists that puerperal septicemia is an infective disease, due to some germ which has been introduced into the uterine cavity, has become absorbed, and sets up inflammation in the uterine wall anterior and exterior to the cellular tissue, surrounding and extending to the peritoneum, and the remedy lies in the removal or destruction of the germ, and nothing I believe is superior to permanganate of potash in one-half grain to the ounce of thoroughly boiled or hot distilled water used as an intra-uterine injection freely. In addition to this, it is important, after the inflammation has extended to the surrounding tissues, that depletion be effected, which can be done best by the use of Epsom salts, as has been shown by Lawson Tait.

If for nothing else Lawson Tait deserves a monument for the use of Epsom salts in the prevention or cure of

peritonitis. The Epsom salts should be given in saturated solution, administering a teaspoonful of the liquid every half hour, until the bowels are evacuated and are entirely relieved. Undoubtedly, many of the older members are conversant with these points, and I only present them for the benefit of the younger members who have not perhaps employed these measures. I would emphasize the importance of thorough irrigation with permanganate of potash. I do not wish to consume further time by discussing the propriety of curetting the womb where we have retention of débris and so forth.

Dr. M. L. Currie, Ailey: I consider puerperal septicemia a very important subject, as it is a condition that we all come in contact with. It concerns the country practitioner as well as those who do city practice. We country practitioners are frequently called to see patients that have been waited on by midwives who do not know anything about how labor progresses, or what has taken place during labor. We can usually conclude that no precautions have been taken so far as preventing this trouble is concerned. I wish to briefly relate my experience in these cases.

A few years ago the intra-uterine douche was recommended by more specialists and a greater number of physicians than it is now. During that time I tried to keep pace with the profession in the matter of progress the best I could. I resorted to this practice after delivery of the child and my experience has been that it is a dangerous procedure. I do not believe we ought to practice it in normal cases of labor. A number of these old midwives seem to have a good deal of success. I have noticed time and again, under very unfavorable circumstances, that the women they delivered got along all right without the douche, although they were rather careless, as usual, in their management of the cases. More recently I have practiced washing out the vagina, and still later I have abandoned that to

a considerable extent. I believe the time for us to be very careful is when we are first called to see the patient. We should be particularly careful as to cleanliness. We should clean our finger-nails, watch the bedclothing, look after the wearing apparel, and see that the woman is in proper condition to be delivered. After she has been delivered, and has no hemorrhage, and the uterus seems to be contracting, I use an antiseptic cloth over the part, and before I leave apply another clean one. The patient is then left to nature, and I must confess I have had better success with this kind of practice than with any other.

As to the after-treatment: if the woman has a chill and high fever inside the first four days after delivery, I search for cause and try to remove it. Where we are called long distances into the country, we cannot depend upon intra-uterine douches to relieve the patient and discharge our duty towards her, from the fact that she lives too far away for us to see her often enough. In these cases, I have practiced washing out the vagina with a warm salt solution very thoroughly, then emptying the uterus, and with the same solution as hot as can be borne by the patient, taking care to see that the os is sufficiently dilated for return flow, I wash out all clots, etc. Having done this, I prepare an antiseptic application as follows: Take a clean probe or applicator and absorbent cotton, make a mop, introduce the mop into 20 per cent. solution of carbolic acid, and then after I get the mop, as it were, wet with the solution, I wring the water out of it, and on it I apply equal parts of compound tincture of iodine and campho-phenique. This is introduced into the uterine cavity on a probe and applied to the whole interior of the uterus. The patient is then left to nature and results watched. If she lives only ten miles distant, I try to see her the next day. If I cannot see her, and she has chill or high fever, I advise a vaginal douche as mentioned and have them notify me.

With reference to internal treatment, I wish to say that I live in a malarial section of the country, and I nearly always give quinine. Where the fever is high, I give salol two parts, to one part of quinine and phenacetin. I am not afraid of salol and a little phenacetin in these cases. I also give tonic treatment, but do not advise the use of very much stimulants.

Dr. B. W. Bizzell, Atlanta: As general practitioners we are frequently called upon to officiate in the delivery of women, or we are called in a few days after the midwife has been in attendance. I do not believe that any physician has the right to assume the responsibility or take charge of a woman who is in a septic condition unless he is prepared to thoroughly disinfect the uterus. It has been my custom when I find a septic uterus or childbed fever to remove as thoroughly as possible the cause of the offending matter. I introduce a dull curette after thoroughly irrigating the vulva and vagina to remove any possible remnant of the placenta which has been left and is septic, and I always follow that up with an antiseptic solution, usually one to five thousand of bichloride, and after that I wash out the cavity thoroughly with sterilized water, using copious draughts of sterilized water to evacuate the bowel. So far as consuming time is concerned, I certainly think that less time and a far less number of visits will be required on the part of the practitioner if this procedure is carried out than if we temporize. How often is it the case that we find women with a temperature of 103 or 104, following a chill, and all the train of symptoms that point to rapid septic infection, and yet after thoroughly curetting the uterine cavity and irrigating it, the temperature will go down and all the unpleasant train of symptoms subside.

As to the country physician, a common fountain syringe, holding half a gallon of water, with a flexible rubber tube, is all we need to irrigate the uterus in this condition. The

antiseptic tablets can be mixed at the bedside and used.

Dr. Chason (closing the discussion): I have very little more to say except this, that Dr. Kime states he would not use strong antiseptics, although he uses carbolic acid. This in a limited quantity is not dangerous, if there is a free exit as well as entrance for the fluid. This is the main point in our experience in intra-uterine irrigation—there is not a free exit for the fluid. I have used bichloride of mercury, 1 to 5,000, in small quantities, after having washed out the cavity of the uterus, in a number of instances without the manifestation of any unpleasant symptoms, and where we use carbolic acid in sufficient quantity to act as a germicide, we run the risk of having some poison.

In reference to the use of stimulants in puerperal septicemia, or puerperal infection, good whisky answers well. I push it in the severe cases, in the subacute or chronic cases, particularly where the system is profoundly overwhelmed with the poison and the depression is great. I would not use strychnia in such cases unless the whisky failed to answer. As a last resort, I would use some respiratory stimulant.

As to the prevention of the disease, I will say that my paper was only on the cause and treatment, therefore I shall not speak of the prevention.

In reference to chills, I do not find them in puerperal septicemia, pure and simple. There is usually the complication of malaria or some inflammation of the adnexa where a chill is associated with it. I do not think any practitioner would experience much trouble with intra-uterine douches, if he has free drainage for the fluid to escape, and it is very little trouble to use them, for the os is usually open in such cases.

Dr. R. R. Kime, Atlanta (closing discussion): This is a subject of vital importance to every physician that is conscientious in the discharge of his duty. It is not enough

to say, "I never had a case of puerperal infection in my practice." We all have them. The physician that claims he never had a case, simply admits his ignorance in being able to recognize such cases, and is akin to the "old fogie" who "never had a case of lacerated perineum." The principles of aseptic and antiseptic methods of preventing puerperal infection should be understood by all, and needs no further comment. In the treatment there is a diversity of opinion, as expressed to-day.

One man gives opiates in full doses, numbs the sensibilities of the patient, in a measure relieving the pain; also uses the coal-tar group to reduce the temperature, ignoring the cause of the trouble, simply combating the symptoms, often doing more harm than good, and aiding the death of his patient.

Another class in septic cases invade the uterine cavity, break up nature's barriers, tear up the endometrium, scrape open closed sinuses, adding untold traumatism, and for fear nature would eliminate or throw off the noxious material and débris, they stuff the uterus with gauze, thus putting a tampon in the way of nature's elimination and drainage; as well fill the trunk-sewer of a city with gauze and expect free drainage, with a healthy, happy people. The latter would bring disease, suffering and death; so will the former.

I again emphasize the statement that the curette and tampon in septic infection has killed more patients than their use has saved. I care not how expert the operator, he cannot remove all the septic germs in puerperal septic infection by the use of curette, sharp or dull, neither can any man efficiently drain such a uterus by a gauze tampon, for we all know it will not drain off anything but a liquid serous discharge, and that for a few hours only, and not even that if the operator plugs or packs the cervix. It retains cellular elements of the blood; débris, dead leuco-

cytes, ladened with septic germs and alkaloidal poisons, preventing their egress or elimination, thus favoring and forcing their absorption. Such treatment is irrational, unscientific, and produces more pelvic complications—*i. e.*, disease of uterine body, tubes, ovaries, lymphatics, blood-vessels, pelvic cellular tissues, pelvic peritoneum, etc., than any other recognized method of to-day in treating septic infection. Establish tubular drainage in these cases, and it not only drains from uterine cavity, but establishes a current of elimination and drainage from endometrium, wall or body, extending, by lymphatics and blood-vessels, to all the pelvic organs, relieving and preventing serious lesions of these structures; also obviates the necessity for so much heroic surgical measures and destruction of pelvic organs.

The soft rubber tube, as shown (see figure 1), has been more satisfactory in my hands so far, yet I am trying tubes of this pattern (see figure 2), which may be constructed of hard rubber, glass or aluminum.

To tubular uterine drainage I add alimentary drainage and elimination, by use of salines, and believe both are essential in every case.

I unqualifiedly condemn the reckless, indiscriminate dosing these cases with whisky as uncalled for, unnecessary and injurious.

Systematic feeding of easily digested, nourishing diet, or giving some of the prepared foods, coupled with the judicious use of quinine, strychnia, and digitalis, is far more beneficial, rational, and scientific.

I have not condemned the use of the curette and tampon without a trial, for I have used them to my sorrow. Neither do I recommend drainage and elimination without investigation sufficient to demonstrate their claim and recognition as the best treatment at present at our command.

I am lately informed others are now trying this same method with the same success, and I hope it will not be long

until it is universally adopted. All I ask is a fair trial of the method, exercising a reasonable amount of dexterity and skill in the use of the tube.

From my own experience, and a considerable experience in consultation work, I am of the opinion that when we fail to get good results it is due to improper selection, placing or manipulation of the drainage-tube. It should be as large as the cervix will admit, usually one-half inch in diameter, of pure, soft rubber, opening large enough to drain freely, not bent upon itself, carried to fundus of uterus, cross-bar so adjusted as not to let it slip out.

REPORT OF SOME UNUSUAL AND RATHER UNIQUE CASES IN ABDOMINAL AND GYNECOLOGICAL WORK.

By K. P. MOORE, M.D., Macon, Ga.

It is interesting to look back over a life of twenty-eight years spent in the practice of medicine, and recall some of the unusual and unique experiences. I suppose all of us who have grown somewhat gray in our professional battles could bring out of the archives of past observations some pleasant things, as well as many that are not perfumed with very sweet recollections. Some of the cases to be mentioned in this brief paper are not of very recent date, and some may have no great deal of practical utility, only so far as they illustrate some curious freaks of nature, and put us on our guard as to diagnosis and caution against unnecessary procedure.

Case 1.—Some years ago I was called to see a beautiful well developed young lady eighteen years of age, then on a visit to our city, who had never menstruated. She was the picture of health, and had only indifferent and vague symptoms, if any at all, of an attempt to menstruate. Her father, who is an intelligent physician, wrote me that he had a suspicion of something wrong with his daughter, and asked me to investigate her case. I found the external genitalia perfect and well developed, and the mons covered with a rather unusually fine supply of hair. Any attempt to enter the vagina was entirely futile, and I suspected nothing more than an imperforate hymen. With no grave apprehensions, I went back to my office to get some instruments,

chloroform, and assistance. I found my friend, and then copartner, Dr. Ross, and asked him to go with me to administer an anesthetic while I punctured an imperforate hymen. The patien t was soon anesthetized, and I proceeded to make an incision in the direction of the vaginal outlet. Cautiously I cut down at least a half inch or more deep, and an inch or more long, expecting and hoping at each stroke to find the opening; but the fact that there was possibly a complete atresia began to dawn upon me, and the necessity for further physical exploration confronted me. Still not suspecting anything of greater gravity than a vaginal atresia, I introduced my finger into the rectum, and could find no evidence whatever of the existence of a vagina. Not the slightest thickening, or other evidences, so far as the touch could determine, of even a rudimentary vagina. The mercury in the column of interest in the case now began to rise more rapidly. She was thoroughly under the anesthetic and I could easily get two fingers well up into the rectum, and the further the exploration went the more intense became my anxiety in the case. Bimanual palpation could be thoroughly practiced, the bladder could be easily outlined, but not a trace of vagina, uterus or ovaries could be found. I now invited Dr. Ross to make a careful examination, and he fully concurred with me as to the entire absence of vagina, uterus and appendages. From a professional standpoint, we were lead to examine her breasts, and I have never seen more perfectly developed mammary glands for a girl of her age than I found in this case. I wrote her father of what I found, but asked him at some convenient time to have some gynecologist of more extended observation to see her. A year or two subsequent to this time she was on a visit to Atlanta, and was seen by my friend Dr. V. O. Hardon, who confirmed the diagnosis. Any move towards an operation in this case could have

been obviated by a more thorough exploration in the outset.

Case 2.—Mrs. F. Large vesico-vaginal fistula involving almost the whole of the vesico-vaginal septum, allowing complete eversion and prolapse of bladder into the vagina, and reaching almost to the vulva. The unusual and most interesting chapter in the history of this case is the fact that the patient was about four and a half months advanced in pregnancy. In the first place, discussing the case from the standpoint of curiosity, it is rather remarkable how she ever tolerated sexual contact, with the vagina filled with an extremely hypersensitive bladder, and the vulva and inside of thighs excoriated by constant dribbling of urine; and in the second place, the rent was so near the cervix that in paring the edges just in front of the cervix, the outer portion of the anterior lip was more or less cut away, two or three sutures coming out through the cervical opening, with these parts all the while bathed with the constant flow of urine, we can but be somewhat surprised that the spermatozoa should survive its bath of urine and find its way into the uterus. Discussing the case from a practical standpoint, the question which confronted us with most gravity was, what should be done with the gravid uterus? Should abortion first be produced, and the operation then done; should the operation be deferred until after she had finished the full term of gestation, conducting the patient through the remaining months as best we could; or, should the operation be done without reference to pregnancy, were the questions presented for solution, and to govern our course. There were present in the council our venerable friend Dr. J. G. McCrary, of East Macon, whose patient she was, my lamented friend Dr. F. Walker, Dr. E. G. Ferguson, and Dr. W. C. Gibson. Without consuming the time, with the arguments *pro* and

con in favor of this or that course, I briefly gave my own idea and plan, which was agreed to and acted upon.

With the history of the previous labor, protracted over thirty-six or forty-eight hours, possibly from malformation, or from *any* cause as to that matter, it seemed to me almost folly to leave the operation until the end of gestation. The pendulous bladder mass in the vagina, and the great pressure even during a moderately prolonged labor, in my judgment would, to say the least, seriously jeopardise the life of the bladder. It is easy to talk about keeping it up out of the way of the advancing child, but we all know how hard it is to keep back a prolapsed funis; and with the highly congested, almost friable and greatly thickened bladder walls, as they were in this case, I felt that it would be hazardous to risk conducting her through labor. Aside from this consideration for the bladder, the wrecked nervous condition of the patient, intensified as it must necessarily become from five months more of torture, seemed in my mind to settle the question against postponement. The next question to be settled was, as to whether abortion should be produced before attempting the operation? The great tolerance of the gravid uterus, sometimes exhibited, of almost all sorts of operations and manifestations, led me to take the position that we could presume upon its tolerance in this case, and give the fetus the benefit of the doubt, and proceed to operate without regard to the condition of the uterus. If the abortion came as a result of the operation, we would do no more than possibly lose the operation, and even this would not necessarily follow; and if it should, we would not lose very much *time*, and so far as I could see, this was about all we would lose. Accordingly the operation was done. The bladder was replaced and packed, in order to keep it up until the paring could be made and sutures placed in position. It required twenty

sutures to close the wound. The sutures were removed in twelve or fifteen days, but the rent was not more than one third closed. She was given tonics, rest and nourishing diet preparatory to another operation which we expected to do as soon as she had regained sufficient strength. On the fourth or fifth day after the removal of sutures, I was hastily summoned by Dr. McCrary to see the patient. She had aborted, and had retained placenta, and fearful post-partum hemorrhage. When I reached her she was completely exsanguinated, pulseless at the wrist, blind as a bat, bathed in cold clammy sweat, and looked to be more dead than alive. That ever faithful friend the hypodermic syringe never did better work than on this occasion. To make a long story short, she rallied as satisfactorily as could be desired, gained strength and vitality quite rapidly, and in five or six weeks the operation was completed with perfect results, and at this writing, now several years, she is a magnificent specimen of physical womanhood.

Case 3.—As illustrating the old and unaccountable story observed by all doctors, that unusual cases come in "schools" and in pretty close succession, I had four vesico-vaginal fistulæ to come under my care, and the third case which I will report is another one of these cases. I was invited by Drs. Baskin and Crawford of Byron, Ga., to operate on a case of theirs. It seemed to be a simple rent in the usual location, a little less in size than a silver quarter. I anticipated easy sailing, and, as my time at Byron was limited, I proceeded at once to vivify the edges of the opening which was easily and satisfactorily done, and one suture placed in position. I now decided to place a curved sound through the urethra to aid as a guide for the sutures in the urethral wall, when, *mirabile dictu!* to my surprise and mortification there was no urethra to be found. There was a slight depression where the meatus ought to have been, and which I had supposed was a meatus, but this depres-

sion was the only thing that in the slightest resembled a urethra. There was nowhere to be found the slightest thickening, or other evidence that she had ever had a urethra. Thinking that possibly there had been a severe urethritis set up at the time, and from the same cause which brought about the fistula, resulting in atresia of the urethra, I began to incise, from the depression mentioned, and searched thoroughly by careful incision down almost to the fistulous opening, and no evidence whatever that she had ever had a urethra could be found. Her baby was only a few months old, and I could not see how it could be possible in so short a time to have a complete obliteration of the urethra. The only explanation I had to offer to the gentlemen present was that hers was one of those freaks of nature, and that in her primitive life the urethra failed to develop. That the meatus in her case was located in the vesico-vaginal septum, just where the fistulous opening was now found; that previous to her confinement this meatus was guarded by a well developed sphincter, which controlled the contents of the bladder; and that the long pressure during confinement produced necrosis and sloughing of this sphincter, and hence her condition. If I had had then the conception of the possibilities of plastic surgery which I now entertain I might have undertaken to make her a urethra and repair her fistula, by dissecting down on either side of the vault of the vagina, and turning in the two flaps and stitching the edges together, and trusting to nature to come to her relief by providing some sort of ability for retention.

Case 4.—Was called fifteen miles into the country to see Mrs. M., aged about sixty-five, with strangulated hernia. My friends Drs. Sam Pursley, of Clinton, and ———, of Cornucopia, had been with her for three days and had done all that could be done for her relief, and an operation was all that gave promise of rescue from death. She had worn an irreducible left inguinal hernia for more than twenty

years, and although it had gradually grown during these years, it had never given her much inconvenience. It was now almost the size of a small fetal head. She was naturally a frail woman, and the constant pain and vomiting for several days, and consequent exhaustion, together with her age, made her case quite unpromising. There was no doubt of the diagnosis, and the line of duty was plain. Assisted by my son, Dr. J. M. Moore, I made the operation. A five-inch incision directly over the tumor brought to light only a large adherent mass of adipose tissue, which proved to be omentum. It was adherent to the walls of the hernial sac, and had to be dissected down to the ring, and was found to be adherent to the margin of the ring, except a space about an inch on the lower margin ; and here I found a knuckle of gut about three or four inches long forced out by the side of this omental mass and completely strangulated. The ring was now enlarged, and the strangulated gut brought well up out of the wound and wrapped in hot towels, and although it was apparently gangrenous, to my great delight color gradually came back, and I soon felt safe in allowing it to go back in the abdomen. The question now before us was the disposal of this rather ragged, jagged, oozing omental mass. The history of its slow growth, and adhesions to the hernial sac, led me to the conclusion that this was not a gradual and continuous leaking out of omentum from the abdominal cavity, but rather an abnormal and gradual growth of that which found its way out years previously. Whether this theory was correct or whether the bulk of it was of recent extrusion, it seemed to me good practice to remove the whole mass ; and I soon had the whole thing ligated and removed ; the stump was now thoroughly cleansed, and allowed to drop into the abdominal cavity. Whatever of fragmentary and redundant tissues of the old hernial sac remained was now trimmed out, and the wound closed. The wound healed

by first intention and patient made a rapid and uninterrupted recovery.

Case 5.—On the 24th of December, 1895, was called eight miles in the country to Mrs. L——, about fifty-five years of age, a patient of Dr. Ousley, who was suffering with strangulated umbilical hernia, who had been attended by Dr. Ousley, a suburban physician of Macon, and Dr. J. H. D. Worsham, of Macon, for several days, and who had done all for her relief that could be done short of operation. From the history of the case given me I was sure an operation was her only hope, and invited Dr. Jas. T. Ross and my son Dr. J. M. Moore to accompany me and went prepared to operate. We found the patient weighing over three hundred pounds, with an immense thick pendulous abdomen, and in very poor physical condition. There was absolute incontinence of urine and feces, due to paralysis, from which she suffered for months, some years previous to the present attack. There was an immense crease across the lower part of the abdomen, which, with the inner sides of the thighs, was excoriated and raw from friction and being kept constantly wet with urine. Added to this lowered general vitality there was the shock usually attendant upon several days suffering with intestinal strangulation and the usual attempts to relieve it by medication, and we have a picture with anything else than a favorable outlook for an operation. There was an immense umbilical hernia, not less in size than a large hat crown, which had been growing for years. To abandon the case on account of the extreme condition meant certain death; to operate promised but little more. With little or no means at our command for asepsis, we hastily improvised a table, boiled a pot of water in the wash-pot in the yard, and taking it in wooden buckets and such other vessels as we could, we began the work. The abdominal wall over this mass, was but little more than skin and thin

fascia, and firmly adherent to the mass of intestine and omentum. Nowhere was the hernial sack separate from the large protrusion of abdominal contents, and these in turn were all glued together in one mass of old adhesions. This was bodily dissected out all around and down to the ring, which was about one and one half or two inches in diameter. Coming down to the ring we found a recently extended portion of gut some three or four inches long, completely strangulated, but not gangrenous, which after short bathing in hot towels, etc., was allowed to go back. It was now quite a job to straighten out and separate this firmly adherent mass of intestine and omentum, and required some tedious and careful dissections. Already the frequent hypodermic punctures by Dr. J. M. Moore, who was giving the ether, and Dr. Ousley, reminded us that time was extremely valuable, and especially what was more valuable was the little spark of vitality now ebbing from our patient. Finding that this vital spark would be gone before we could satisfactorily finish the dissection we straightened it out and trimmed off superfluous shreds and strings as best we could, and proceeded to enlarge the opening into the ring sufficiently to reduce this mass. We found it necessary to make a good large incision down through the thickest abdominal wall I ever cut through ; as soon as this incision was made, instead of a mass of intestines as large as a baby's head, we had at least a peck out over the abdomen. Our hypodermic men were faithfully and busily at work, with an injunction at every puncture, that if we did not hurry the patient would die on the table. With all the haste possible Dr. Ross, who was assisting me, and myself managed to get the abdominal contents back and wailed them in with a yard or so of iodoform gauze, and put in the sutures, removing the gauze as we closed the wound. Owing to the extreme condition of the patient, the operation was unsatisfactorily done, and we could not hope for satisfactory

results. We got the patient to bed, and packed bottles of hot water around her, and strange to relate, although she had been two hours under the ether, before we had cleaned up the instruments and cleared away the débris she had returned to consciousness, and except some suppuration in the wound made a speedy recovery; and now for something over a year has been in better health than before.

Case 6.—March 17, 1895, I was invited by my lamented friend Dr. W. C. Gibson to see Mrs. P———, aged about thirty-six, mother of several children, who had an abdominal tumor. Several months previously this tumor had been discovered during the latter months of gestation, and a probable diagnosis of enlarged spleen was made by Dr. Gibson and the father of the patient, who was himself a good physician. Her babe was, at the time of my visit, four or five months old, and the tumor was growing and beginning to be more or less painful and distressing to the patient. It extended from the lower border of ribs on the left side down into the pelvic cavity, and was easily felt through the vagina and gave the impression of pelvic adhesions. I placed the patient in every position and examined her from every direction, and I made a possible diagnosis of a long ovarian fibroid and advised an operation. On March 20th, assisted by Dr. Jas. T. Ross, and in the presence of Drs. W. C. Gibson, who administered ether, and J. G. McCrary, I made the operation. The tumor was of a dark brown, slightly bluish color, looking very much like the liver or spleen, or possibly a large floating kidney. The appearance and slight exploration showed at once that it was not of pelvic origin. Passing my hand around it I found it adherent only on the under side, a little to the left, and slightly below the umbilicus. The point of adhesion was about the width and thickness of my hand and very slightly pedunculated. Coming up, as this seemed to do,

from almost directly over the area of the left kidney, my first search was made in this direction; finding the left kidney intact, I next looked for the right; it was also found to be in place. I next felt for the spleen, and then for the liver, and finding these organs in their normal position and condition, I was puzzled to account for the stranger before me. Whatever it might be, it was abnormal, and was beginning to tell upon the physical well-being of the patient, and must come away. I now enlarged my incision and delivered it. The adhesion was found to be a thick, strong, broad pedicle about a half inch long, springing up out of the mesentery between the coils of the intestines. With five or six cobbler-stitch ligatures I cut away the tumor, which was extremely vascular, washed out the abdomen and closed the wound. Nothing unusual in the recovery of the case. There was never any fever, and in a little more than one month the patient returned to her home in Americus, Ga. She soon fattened up and grew to be quite strong and well and since that time has been delivered of a pair of twin babies. So far nothing unusual appears in the history of this case, but the interesting feature comes in the discussion of the nature and character of the tumor. A specimen of it was at once submitted to Dr. W. B. Gilmer for microscopical examination, and he made a possible diagnosis of round cell sarcoma, though the doctor would not make this as by any means positive. A few days after the operation I chanced to meet my friend Dr. J. B. S. Holmes of Atlanta, and showed him the tumor, and gave him a history of the case and operation. It was to him, as well as myself, a case of no little interest, and he kindly offered to take a specimen to Atlanta and have it examined by Dr. Harris, histologist, now of Jefferson Medical College. With no clue as to the origin of the specimen or history of the case, Dr. Harris made a careful examination of the specimen and was positive as to its being spleen tissue. In July

following, my son, Dr. J. M. Moore, returned from New York, where he had spent several months studying microscopy in the Carnegie Laboratory, and a specimen was submitted to him for examination and he confirmed the diagnosis of Dr. Harris. Now the question comes up as to how did this patient happen to be blessed above her average fellow mortals with two spleens, and how did this one find its way, take root, and develop this late in life away down this low in the abdominal cavity. Its origin, location, and present development are matters of pure speculation. The only theory I have to offer is, that in the primitive period of life, as we sometimes find with any of the organs, there was left this rudimentary element of a second spleen which found lodgment in this location, and from some unexplainable reason developed at this time, and as it grew became more and more vascular, and hence the rapid development during the last few months. It is said to be a physiological fact that it is not *very* unusual that spleen cells are found in the mesentery and surrounding tissue near the spleen and stomach, but how this one came to develop at all, and especially how it found its way to its present location, will ever remain a mystery.

DISCUSSION ON DR. MOORE'S PAPER.

The President called upon Dr. Kime to open the discussion.

Dr. R. R. Kime said: "If I remember correctly, the essayist reported several interesting cases which have occurred in his abdominal and gynecological work, and one case especially showed the wonderful resources of nature when it comes to the aid of the abdominal surgeon in almost hopeless cases, and strikingly illustrates to our mind how nature can do what the surgeon fails to do.

IODINE IN THE TREATMENT OF CORNEAL ULCERS.

By J. LAWTON HIERS, M.D., Savannah, Ga.

Mr. President and Gentlemen:

When I was requested by the chairman of the Committee on Program to prepare a paper to be read at the present session of the Medical Association of Georgia, it occurred to me that I could not present anything of more interest than my experience with iodine in corneal ulcers, for which I would humbly asked to be credited as the first to have used it successfully in the treatment of ulcers of the cornea. It is not my purpose to go into a detailed history of corneal ulcers, but to give you the one point aimed at—viz., the successful treatment of both phlyctenular and traumatic ulcers of the cornea with iodine. The local action of iodine, as we well know, is caustic, antiseptic, a local stimulant and a mild counter-irritant, promoting the absorption of inflammatory products. Now, with this knowledge of its action, we are enabled to understand that when iodine is applied to an ulcerating surface of the cornea, the germs of infection are destroyed and the products of inflammation caused to be absorbed, thereby instantly converting the ulcer into a recent injury which readily heals under antiseptic precautions. By this treatment we not only lessen the days of our patient's suffering, but we cut short a malady which otherwise might have resulted in great damage—yea the complete destruction of one of the most useful members of the human body. My experience thus far proves very conclusively that the

opacity resulting from an ulcer of the cornea is very much less when treated with iodine than when treated with the usual remedies.

As regards the preparation of iodine, I prefer the officinal tincture. My method of applying it is, first, to cocainize the eye to complete anesthesia. I then introduce an eye speculum and scrape the ulcer thoroughly with a spud or some convenient instrument, dry the part thoroughly, then, with just a few fibers of absorbent cotton twisted tightly around a small probe or applicator, which has been previously dipped in the undiluted tincture of iodine, I apply it thoroughly to the ulcer, being careful, however, to dry off the excess, allowing none of the iodine to come in contact with the healthy parts of the eye, after which I bathe the eye with sterilized water or boric acid solution, and treat it as I would a recent injury of the cornea.

My first experience with iodine in the treatment of corneal ulcers was on September 29, 1895.

On September 21, 1895, Maggie L., a chambermaid, aged nineteen years, presented herself at my office for treatment. On examination, I found her suffering with a phlyctenular ulcer of the cornea, about two mm. in diameter and about three mm. from the sclero-corneal margin, which had already penetrated about one-half the thickness of the cornea. The superficial vessels were very much injected, lachrymation profuse and the eye quite painful; her physical condition robust; family history good. I immediately cocainized the eye and cauterized the ulcer by means of actual cautery. I then washed the eye out with a saturated solution of boric acid and instilled two drops of a one per cent. solution atropia sulphate, prescribing for her a saturated solution of boric acid, which was used freely to bathe the eye at intervals, and a mixture containing atropia sulphate grs. iv., boric acid grs. v., aquæ distillata

to make one ounce, using one drop three times a day, giving the patient absolute rest and keeping her in a dark room. This treatment was continued, and at the end of the fifth day all inflammation had subsided, but the ulcer was not yet quite healed, and by the seventh day the inflammation had reoccurred. I again cocainized the eye and cauterized the ulcer as before. Hoping that a change in treatment would be beneficial, I discontinued the atropia and prescribed eserine grs. 1, aq. 1 oz., one drop three times a day, and hot application at intervals of three hours. The eye immediately began to improve, and by the end of the fourth day ulcer had closed to the size of one mm., when the eye again became inflamed and the ulcer began to slough. I then resolved to try iodine. I cocainized the eye to complete anesthesia, introduced an eye speculum, scraped the ulcer with a spud and applied the officinal tincture of iodine, by the aid of a few fibers of absorbent cotton twisted on a small probe. I then wiped off the excess with a bit of dry cotton, and washed the eye out with a saturated solution of boric acid. I put my patient to bed and applied small pads of absorbent lint saturated with a solution of boric acid grs. xv., to aq. dist. oz. 1, changing them at short intervals, and at the end of twenty-four hours the ulcer was entirely healed.

October 14, 1895, Mr. N. B., aged twenty-three years, carpenter, was struck in the right eye with a small chip of wood. After two days' treatment with home remedies he called to see me. On examination I found him suffering with a central traumatic ulcer of the cornea. I immediately cocainized the eye, scraped the ulcer and applied the iodine as above stated, after which I washed the eye out with sterilized water, applied a small pad of absorbent cotton and a light gauze bandage, which was saturated, at short intervals, with a saturated solution of boric acid. On the following day my patient being so much improved, I

continued the same treatment, and at the end of forty-eight hours he was entirely well.

I desire to state that since September 29, 1895, I have treated eighty-seven cases of phlyctenular and traumatic ulcers of the cornea with the tincture of iodine, varying my after treatment to meet the indications of each case. In six cases three applications of iodine were necessary to effect a cure; in seven cases two, and in seventy-four one only was sufficient.

DISCUSSION ON DR. HIERS'S PAPER.

Dr. J. M. Crawford, Atlanta: I have never used tincture of iodine in the treatment of corneal ulcers. I do not doubt but what it is a good plan, and particularly the scraping. Using cocaine, then scraping the ulcer, makes it aseptic, puts it in a good condition, then binding the eye up to the lid with a pledget of cotton and keeping it still. I do not see why such treatment should not be beneficial. Having had a great many cases of corneal ulcers under treatment heretofore, I should say the treatment would be very beneficial. I have been delighted with the doctor's paper along this line.

Dr. George Horine, Americus: While I have never had any experience in treating corneal ulcers with tincture of iodine, I think we are indebted to the doctor for his paper, and I think that he has put the profession in general under great obligations to him, and particularly those of us who treat eye diseases, because we know some corneal ulcers give a great deal of trouble and are frequently intractable. His success with iodine seems remarkable. I hope that I shall at some time in the near future have an opportunity to try this remedy in cases of corneal ulcer.

Dr. M. M. Stapler, Macon: An ulcer of the cornea is like an ulcer anywhere else, with the exception that a corneal ulcer has not as rich a blood supply as we have in other

parts of the body. We can proceed upon the same lines in ulcer of the cornea that we can elsewhere, with the exception that we must try to avoid the formation of scar tissue, treating the diseased portion with as little destruction to the surrounding tissue as possible. Most of the corneal ulcers we have will yield to antiseptic treatment, to bichloride of mercury or to yellow ointment, if kept clean and then washed by boric acid and the usual aseptic treatment. I have never tried iodine in these cases. It may be a good thing, but the great object to be attained in the treatment of corneal ulcers is to prevent scar tissue. The more scar tissue, the less the vision; the smaller the scar tissue, the better vision we have and less astigmatism.

Dr. Hiers (closing the discussion): I have nothing further to add, except to thank the gentlemen for their hearty commendation of my paper, and to answer a point brought out by Dr. Stapler, namely, that one of the great objects in using iodine is to lessen the amount of scar tissue.

My experience in the treatment of corneal ulcers with iodine has been that we get a much quicker result, and, in so doing, we have less scar tissue, because, in the majority of cases, where we use the actual cautery we are compelled to have a greater amount of sloughing. On this account I prefer the iodine.

I sincerely hope my colaborers will have as good results with iodine as I have had.

REPORT OF A SUCCESSFUL RHINOPLASTIC OPERATION FOR LOSS OF THE NOSE; ALSO OPERATION FOR REMOVAL OF THE DRUM-MEMBRANE AND NECROSED BONES IN CHRONIC SUPPURATIVE AURAL CATARRH.

By J. M. CRAWFORD, M.D., Atlanta, Ga.

The patient, a maiden lady of forty years of age, first came under my notice about ten years ago. She was then suffering from a severe case of syphilitic iritis, which responded promptly to treatment, her vision being restored. The treatment was continued more or less regularly for a year or so.

Some three years ago, however, there developed a catarrhal condition of the nose. Her general health having failed, and being a woman of moderate means, she was compelled to remove to the country, which placed her beyond the reach of medical attention. She did not suspect the catarrhal trouble had any connection with her former ailment until after the whole of the septum, cartilage, integument, and turbinated bones had all sloughed away, leaving only the tip of the nose intact, as shown in sketch No. 1.

At the time she presented herself, the opening was oval in shape, and extending downward and to the left side about an inch and a half long. She was indeed in a pitiable condition, having this enormous and unsightly aperture in her face, which was a source of great annoyance, as the air would strike against the mucous membranes, keeping up a constant irritation and drying the secretions of the nasal cavity, hardening them into coatings or crusts that

she could not remove, such enormous quantities collecting in a surprisingly short time. The condition of the case was rendered more serious and treatment more imperative, since the hearing was being greatly impaired, caused by the air striking the pharyngeal mouths of the Eustachian tube through this opening, which was such as to give rise

No. 1.

to a reasonable fear that she might become permanently deaf. Under these conditions an operation to close the opening was determined upon.

My first effort was to secure healing of the ulceration, which was effected by the use of sprays and other cleansing processes, together with large doses of the iodides.

On November 1, 1896, assisted by Drs. W. S. Goldsmith, E. L. Brooks and Prof. Shaefer, the patient being under the influence of ether, I pared off the margins of the cavity, avoiding any unnecessary loss of tissue. Then with a sharp bistoury, commencing at the apex of the

opening, I made an upward and oblique incision over the forehead, reaching nearly to the hair, then turning across more or less parallel to the margins of the hair for two inches from the base of the flap; from this point the incision was continued downward and inward nearly to the starting point, leaving only a pedicle through which the flap received its blood supply. I then peeled off this triangular piece of integument, and turned it over the aperture, adjusting its margins to the denuded surface around the opening, in a manner reproducing the original outlines of this portion of the nose. The cut edges of the integument upon the forehead were drawn as close together as possible, leaving a denuded space the greatest width of which was two inches in breadth. It was dressed with iodoform gauze; the nasal cavity was also packed with the same material. The dressing was renewed daily for two weeks. She was then again placed under the influence of ether for the purpose of clipping the pedicle and relieving it of the twist in which it had been placed. And putting this disengaged flap upon a stretch I carried it as far as possible over the denuded portion of the forehead and then fastened it there and dressed it as before. In a reasonable time the entire healing was completed, the patient presenting herself as you see her in sketch No. 2.

When first considering the operation, a question arose as to where the necessary quantity of integument should be taken. The size of the opening would render it impossible to get a graft from the arm or other parts of the body that would live. This determined me to take the flap from the forehead. The integument removed from the forehead has been entirely replaced, leaving only a small cicatrix which would be scarcely observed, except on close scrutiny.

The operation was eminently successful. The points of interest, briefly stated, are as follows:

No. 2.

1st.—Since the operation, the patient is able, by the use of a little salt water drawn from the hand into the nose, to keep the nasal cavity clean.

2d.—The patient's hearing has been greatly improved.

3d.—The catarrhal symptoms are much better and less annoying.

4th.—The removal of an unsightly facial deformity has decidedly improved her personal appearance and rendered her company less objectionable.

Case No. 2.—Mr. T., aged twenty-six, presented himself for treatment for chronic purulent otitis media, about the first of June, 1896, and gave the following history: Six

years before, while in Chicago at college, during a very severe winter, he took a violent cold which resulted in acute suppurative aural catarrh in left ear. This was followed by mastoiditis, for which he was operated on at that time. The discharge was kept up all the while, since resulting in an entire loss of hearing in this ear.

Since he had tried antiseptic applications thoroughly during this time and finding no material benefit, I lost but little time in telling him of the operation I desired to make, the removal of the drum-membrane, together with the necrosed bones. This I did the first of July, '96, he of course being under ether.

To secure the necessary illumination of the inner ear I adopted the following plan: The patient was placed prostrate in an ordinary Wilkerson dental chair, and having on my forehead a head mirror I arranged my electric light so that sufficient brightness could be thrown into the ear canal. I first punctured the drum-membrane near the lower portion of the posterior wall of the canal with a sharp-pointed bistoury. Then introducing a probe-pointed knife, I made a circular incision around the margin of the membrana tympani, severing it from the ear canal. With the forceps, I then removed the membrane and malleus. I found the malleus in a healthy condition. Then with a curette I dislodged two small pieces of necrosed bones, probably the incus and stapes. It was then made evident that these necrosed bones were keeping up the formation of pus. The necessity for the operation was made more evident, since the remaining portion of the perforated membrane had served as a shield or blind behind which pus had constantly accumulated and made difficult the necessary drainage.

The operation, then, secured a twofold advantage; first, the removal of the cause; second, a perfect drainage which was necessary for the healing to take place.

After the operation followed the usual antiseptic treat-

ment. The patient was put to bed and there remained for two or three days.

The discharge from the ear continued for several weeks, constantly growing less until it finally ceased, and now for several months has been entirely well.

The operation was not intended to benefit the hearing, but to get rid of a constant discharge from the ear, which was not only annoying to the patient and required great care in washing and cleansing, but was also a constant menace to his health, rendering a probable return of the mastoiditis from which he had previously suffered.

The operation has proved a success. The patient is now entirely well, and the discharge from the ear, which had continued constantly for more than six years, has ceased altogether.

Discussion on Dr. Crawford's Paper.

Dr. J. H. Shorter, of Macon, was called upon to open the discussion. He said: I did not hear the report of the first case of rhinoplastic operation after destruction of the nose. But with reference to the other case, I think that in an old chronic suppuration of the middle ear, by removing the ossicles, establishing free communication with the attic and thorough drainage, we usually get most beneficial results. The doctor mentioned the fact also that there was mastoiditis and that an operation was made, but did not state whether the operation was a simple "Wilde" incision or an opening through the bone and clearing out of the mastoid cells. These two operations, removal of ossicles and opening the mastoid, illustrate very well what can be done by surgery in purulent otitis media. There is no doubt but that otitis media purulentia, besides being cause of great annoyance and often of loss of hearing, may be a source of danger to life by serious thrombosis, brain abscess or septic meningitis. Hence the need of early opera-

tive measures in all cases of running ears which do not yield reasonably promptly to ordinary treatment. Some life insurance companies, I believe, object to taking risks on a person with chronic purulent otitis.

Dr. George Horine, Americus: In regard to a chronic purulent discharge from the middle ear, and also a mastoid operation for curing it, it was my misfortune to have a case of this kind a few years ago. A physician had treated the patient in New York before the man had come back to our place. I understand that Wilde's incision was made and it gave the man no relief. The incision was carried down to the bone and the mastoid cells were opened up, followed by a thorough washing of the cells and treatment of the ear, but no relief was afforded. I performed an operation in which I removed the ossicles, the same that Dr. Crawford performed, and it resulted in a perfect and permanent cure. The mastoid operation will not cure chronic purulent otitis media unless the opening between the mastoid cells and the tympanic cavity is large.

I would ask Dr. Crawford to state in his closing remarks what sutures he used in the plastic operation, the length of time they were left in, the method of inserting them, the distance they were apart, and whether he removed them all at once or not. I have tried different methods myself and have had a variety of successes. In some cases the results were good; in others not quite so successful.

Dr. Crawford (closing the discussion): In answer to Dr. Shorter, I will say that Wilde's incision was made, but the patient was operated on twice for mastoiditis. Wilde's incision was tried, but a secondary operation became necessary. A physician in Texas operated on the man and put him under the influence of ether. He trephined into the cell and scraped it thoroughly.

With reference to the question regarding sutures, the patient was in such good condition that I took the utmost

care and used ordinary black silk sutures, making them rather close together. I inserted a good many of them, leaving the patient in that condition for a couple of days. Then daily after that I dressed the wound, removing the gauze in the nose and the batting on top of the nose, washing the parts with a bichloride of mercury solution. The black silk sutures were allowed to remain about a week.

As to the use of salt water in the nose, I do not advise that in ordinary cases, yet I do not see any particular objection to it, as there is some virtue in it as a cleansing agent, and it is noted for its simplicity. It was used more on account of its simplicity than anything else. In those cases where the ingress of air strikes the mucous membrane inside and causes a drying of the secretion hot water does keep it clean and I advise it.

LUPUS OF THE NOSE.

By GEO. S. HORINE, Americus, Ga.

Lupus vulgaris is a new cell growth of the skin and adjacent mucous membrane, appearing in the form of variously sized and shaped reddish and brownish spots, consisting of papules, tubercles or infiltrations, which are removed by interstitial absorption, or by ulceration and cicatrization.

Symptoms.—I shall give only a brief résumé of the symptoms, as most of my hearers are no doubt familiar with the appearance, as many of you very likely have seen numerous cases of lupus.

The appearance necessarily varies with the stage of the trouble. Lupus begins with the appearance of many small discrete spots from the size of a pin-head, to the size of a pea, deeply seated in the true skin.

These well-defined spots are situated beneath the epidermis in the corium. The spots can be seen through the true skin, and give the skin a punctated appearance. In the course of some months they slowly increase in size, and approach the surface of the skin, until finally the epidermis covering them breaks down and ulceration follows. Wherever these tubercles are discrete of course isolated points exist, but they soon extend until they unite and a solid ulcerated surface is formed covered by a thick crust. When this thick crust is removed a new surface bathed in pus is seen, ulcerated in some points and in others granulating. The granulations under the crust continue in some cases, are greatly enlarged, forming what is called lupus

hypertrophicus, but lupus hypertrophicus and lupus, lupus exedens and non-exedens, are merely terms descriptive of the condition existing in a particular part, and are rather confusing, in that they would lead a student just commencing the study of medicine to get the idea that they form varieties of the malady, whereas, a case of lupus may pass through the different stages and constitute lupus of one kind now, and in a short time possess the typical characteristics of another kind.

Lupus is not a painful trouble, in fact, the absence of pain is somewhat remarkable when we come to think of the amount of tissue change and tissue destruction.

Lupus may occur in any one part of the body, but its favorite seat is the face, especially the nose, cheeks and ears; the cartilage may be destroyed by extension from the skin. Cartilage of the ear or nasal septum may also be destroyed by it. Lupus, when it appears on a mucous surface, is not at all easily recognized, as the spots that render its existence so perfectly clear, when it appears on the skin, are not present when it comes to a mucous surface.

The diagnosis of lupus is usually not at all difficult, especially after it is fully developed. Syphilis and epithelioma are most likely to be mistaken for it, and the differential diagnosis is attended with some difficulty in some cases. Two points that few of the books lay any stress upon I have found to be very valuable aids to diagnosis. One is the almost universal absence of pain where the amount of inflammatory infiltration and tension would render the existence of pain very probable, and the other is the thick crust that forms in most cases of lupus, and especially the very rapid reproduction of this crust after its removal.

Pathology.—The pathology of lupus is involved in some doubt, but weight of evidence is in favor of the idea that it is a local tubercular process and some of the recent experiments are strongly confirmatory of this view, espe-

cially production of tubercular peritonitis by injecting lupus material.

It was with the idea that lupus was caused by tubercular bacilli and the known affinity existing between them and pyoktanin that caused Dr. Coomes, of Louisville, Ky., to first conceive the idea that pyoktanin would probably have a curative effect in lupus, and to Dr. Coomes I am indebted for the suggestion that pyoktanin would cure or benefit lupus, as he had succeeded in curing one or two cases with it and had benefited some others.

With this brief introduction I will proceed to give in detail a history of three cases of lupus that I have cured in the last two years.

In September, 1895, case No. 1, a boy ten years old, and in every way a healthy subject, came to my office with an extensive and well-developed lupus of the nose and upper lip extending on either side to the cheeks. The whole area was covered over with a thick crust, and upon removing the crust I found an extensive granular surface bathed in pus. Of course the territory involved rendered an operation impossible, and I went to work to try to cure the trouble. I first used stick nitrate of silver. I would sharpen a stick and bore into the exuberant granulations, but the amount of good accomplished by this treatment was very nearly none at all. I then tried electro-cautery with a similar result. I then used several chemical cauteries, but these seemed to produce so much irritation that, by the time the inflammation caused by their application subsided, the parts were about as before the treatment. I then tried proto-nuclein, and for a while it seemed to benefit the trouble, but after a while it came to a standstill, and under its use, though I used it for some time very faithfully, no further improvement occurred.

I then began the use of pyoktanin or methyl violet, and almost from the first day of its use improvement was per-

ceptible, especially around the margin of diseased surface. The improvement was without an interruption until the process of repair formed the coating on the surface, and at this stage it came to a standstill and I began to think that I had again failed. After applying the solution of pyoktanin on the surface for some time and observing no further improvement, a thought occurred to me that the germs, whether tubercle bacilli or not, were protected by the thin membrane covering the surface, and I concluded to inject the solution into the tissues with a hypodermic syringe. I accordingly selected a small place near the center to make a trial upon. The result was most gratifying, and from this time on the cure was without any interruption until it was completed.

I found in using the treatment that it was necessary to curette a few bad places, and I also found it was an advantage to use silver nitrate to smooth off the most elevated places, and I found that the irritation and inflammatory reaction resulting from the electro-cautery, or a chemical cautery, was lessened very much by the use at the same time of the pyoktanin solution. The last place to heal in this case was the *ala* of the nose, and on one side a very slight loss of tissue resulted in an almost imperceptible deformity.

The treatment in trying various remedies occupied five or six months and the cure with the pyoktanin covered about seven or eight months.

Case No. 2.—A child about two years of age. Lupus of the nose, covering the tip of the nose and also one *ala* of six months' standing. I had the former experience to guide me, and succeeded in curing this case in about four and one-half months. I used silver nitrate a few times, but not as much as in the former case. The cure in this case was completed without any resulting deformity.

Case No. 3.—A healthy negro child, four years of age. Lupus of the external ear and the external auditory meatus were well developed and about seven months' standing. In this case I used nothing but peroxide of hydrogen and pyoktanin. Slight deformity resulted in this case, the ear being somewhat warped and drawn, especially the lobule of the ear.

In all of the cases I am fully convinced that to the pyoktanin all of the credit is due. I will now in a brief way describe my method of using it: In the first place I remove the crust, but it will not do to remove the crust too frequently; as soon as the pus under it will exude through the various holes and crevices when pressure is made upon it, it shows that the crust is loose and can be removed without irritation resulting from its removal. After the crust is removed, then apply peroxide of hydrogen to thoroughly cleanse it from the pus. After cleansing thoroughly with the peroxide on cotton, I then apply a freshly prepared 2 per cent. solution of pyoktanin, and then wait ten minutes to let it dry, and then apply it again, and as the case goes on, as I find an elevated place I apply silver nitrate to smooth it down, but I am always careful to apply pyoktanin solution afterwards. I know that in many instances pet remedies are introduced by physicians, and that afterwards they are tried by the profession, and that no one ever gets the brilliant results reported by the enthusiasts who introduce them; but nevertheless I am fully persuaded that any one who will give the treatment I have described a thorough trial will not be disappointed in the results. I am sure that thorough cleansing with peroxide hydrogen, followed by two or three coatings of 2 per cent. solution of pyoktanin every two or three days, or at least as often as the crust can be removed without irritation, together with a small amount of cautery and the subcutaneous injections of pyoktanin will either cure almost any lupus, or so limit

it that we can almost eradicate it by a slight surgical operation.

DISCUSSION ON DR. HORINE'S PAPER.

Dr. J. M. Crawford, Atlanta, was asked to open the discussion. He said: I have never seen a case of lupus. I wish I had. I can add therefore very little to this subject. With reference to the use of peroxide of hydrogen, I have noticed that a great many physicians favor it. Personally, I prefer hydrogen dioxide, instead of the peroxide, because it is not quite so irritating in its effects.

Dr. J. L. Hiers, Savannah: My experience with lupus of the nose has been quite limited. I have seen only one case that I recall at present. I have listened to the doctor's paper with profound interest. I am sure many general practitioners will be benefited by it, and I am glad I was present when he read it.

Dr. M. L. Currie, Ailey: I saw one case that I diagnosed as lupus. It is a difficult disease to relieve. This case occurred in a boy about ten years old, and his parents objected to any heroic treatment. They would not let me use the curette or anything of that kind. I had to use a caustic preparation in a rather secret way in the treatment of this case, and after a long time I succeeded in curing the patient. It was a small lupus growth, involving the cheek in front of one of the ears. I forget now on which side of the face it was. I used resorcin with a preparation of carbolic salve and cured the case after a long time.

WASH-DRAWINGS ILLUSTRATING A CASE OF HYPERTROPHIC ELONGATION OF THE CERVIX UTERI,

WITH COMPLETE EVERSION OF VAGINA FROM FIBROID TUMOR OF THE CERVIX. RESTORATION BY SUPRA-VAGINAL AMPUTATION OF THE CERVIX AND INVERSION OF THE VAGINA.

By GEO. H. NOBLE, M.D.

Mrs. H., a tall countrywoman, came to me from the mountainous region of Georgia on January 25, 1894. She stated that shortly after her first confinement, which occurred eight and a half years ago, she discovered a tumor, about the size of an ordinary marble, growing upon the neck of her womb, which, after a subsequent childbirth two and a half years later, had grown to the size of a hen's egg. From this time she dates the prolapsus, the tumor having escaped from the vagina. She had not suffered much except from the discomfort of aching, dragging, etc. Six years ago the lower extremity of the tumor ulcerated, but afterward healed, and, two months before admission, ulcerated again, from which she suffered the effects of absorption—accelerated pulse, elevated temperature, chills, profuse diaphoresis, etc.—until she became anemic and more or less emaciated. The family history was good.

The condition on admission was as follows: temperature 102 2-5 degrees; pulse 116, weak and compressible; respiration 22 per minute; menstruation normal; bowels recently constipated; painful and frequent urination, and at

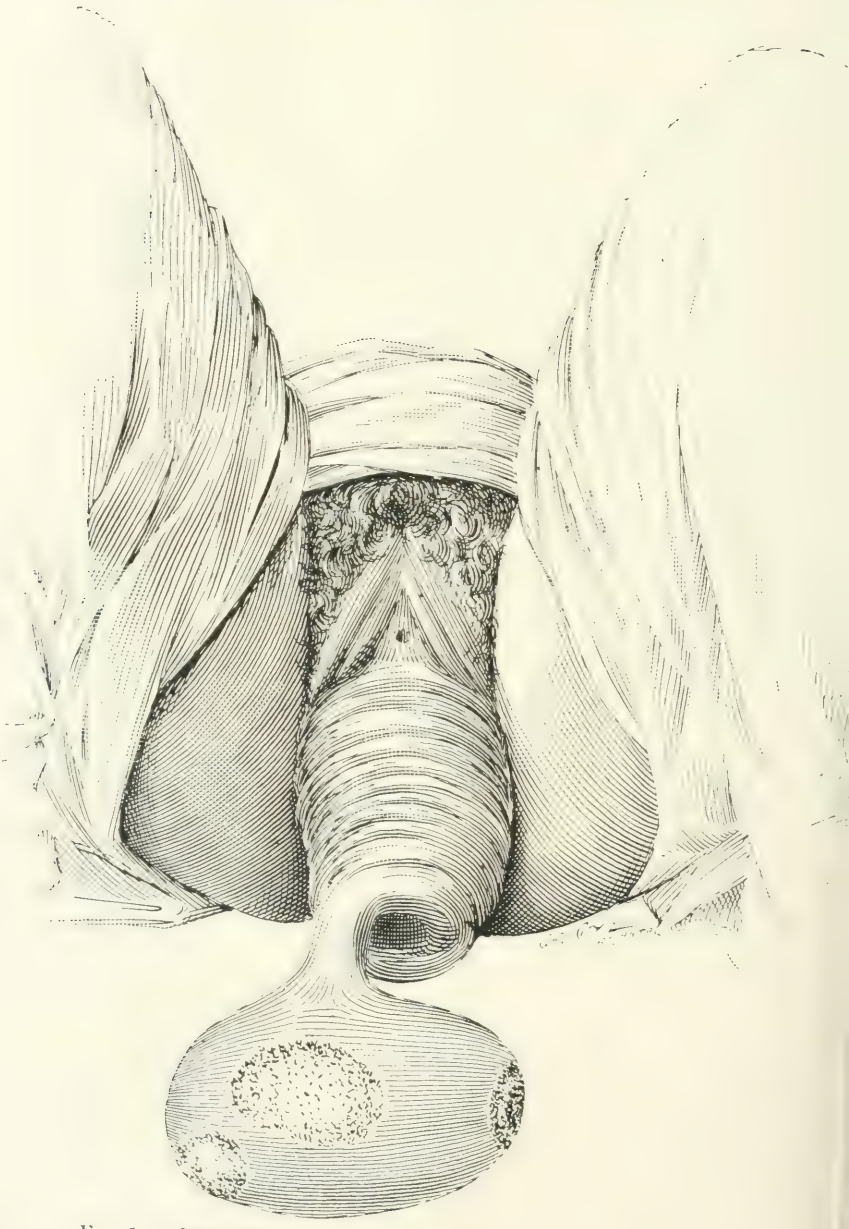


FIG. 1.—Showing tumor and everted vagina before operation.

times incontinence of urine. The urinary analysis disclosed nothing abnormal except a diminished excretion of

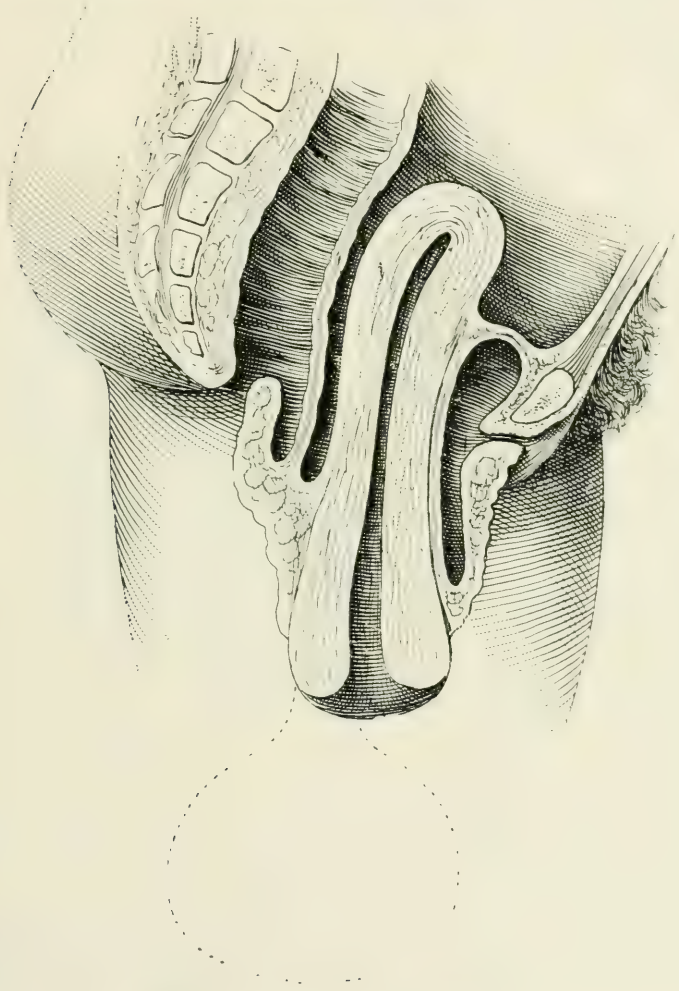


FIG. 2.—Sectional view of same.

urea. Vaginal discharges profuse and muco-purulent in character. Heart, lungs, etc., negative.

Inspection shows an egg-shaped fibroid tumor, about nine inches long and six inches in diameter, attached by a pedicle on its side to the upper right margin of the os uteri. There are five superficial ulcers, three upon the anterior and two

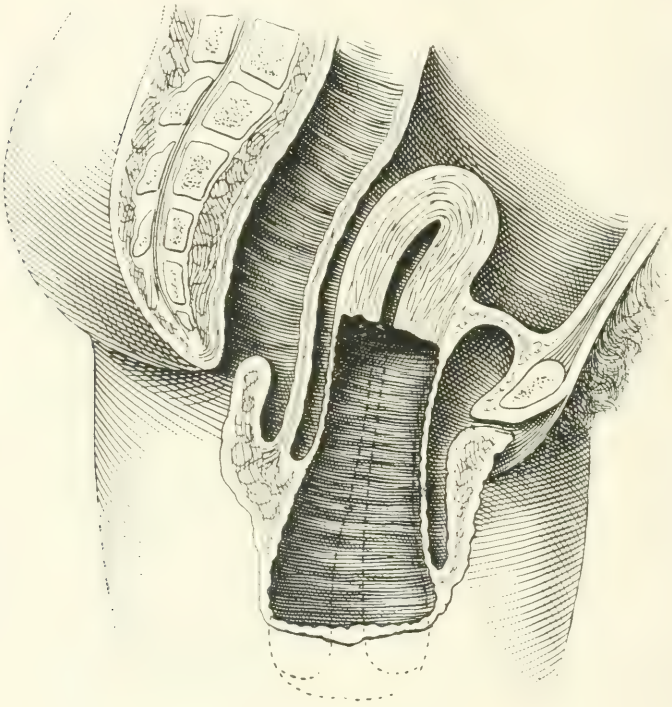


FIG. 3.—Dissection of bladder and rectum from cervix uteri, and amputation of latter at the internal os.

upon the posterior surface of the tumor, averaging the size of a silver dollar. The vagina is completely everted, not even a sulcus remaining within the vulva. The bladder and rectum are turned out through the vaginal orifice, forming deep pouches in front of and behind the mass. The cervix is as large as an ordinary sized man's wrist, and

elongated sufficiently to permit extrusion of the vagina, while the fundus uteri is near its normal position. The cavity of the uterus is three inches deep, that of the cervix seven inches, making a total of ten inches. The round

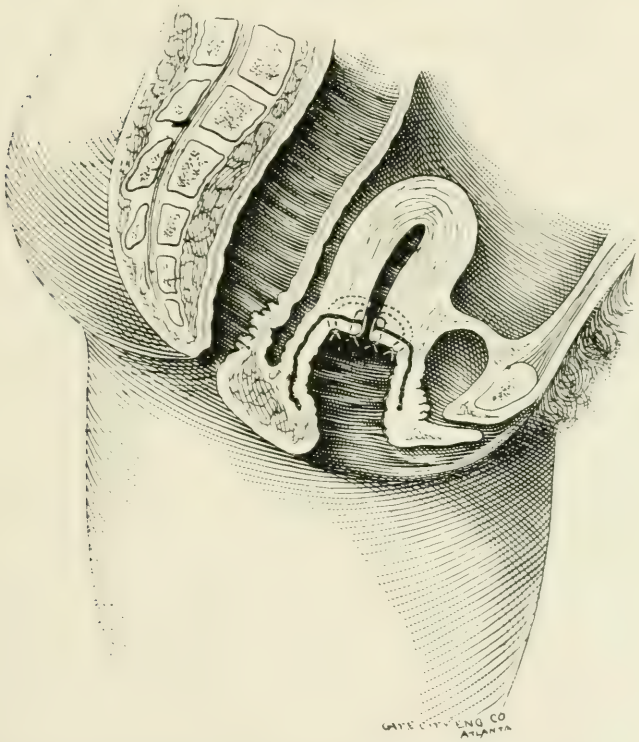


FIG. 4.—Showing restoration by inverting vagina, rectum, and bladder, and anchoring with mattress sutures in the stump.

ligaments are very much hypertrophied, feeling like cords larger than a lead pencil. Other pelvic organs seem free from disease.

As hysterectomy is often unsatisfactory in procidentia uteri, I determined to do a supravaginal amputation of the

neck and replace the everted vagina, knowing that the supports were equal to the task of sustaining the parts.

The operation consisted in the usual circular incision dissecting off the bladder, rectum, and post-uterine peritoneum from the cervix for a distance of six and a half inches and amputation of the cervix at the internal os, ligating the uterine arteries and other large vessels as they were encountered. The parts were very vascular; many of the vaginal branches were as large as small quills; consequently the operation was tedious, frequent ligation being necessary. After removal of the neck of the womb the vagina was stitched to the stump by four mattress sutures introduced an inch back of the free margin of the vagina, then through the walls of the uterus, beneath the cut surface of the stump, emerging from the cervical canal, then passed in the reverse direction and tied on the surface of the vagina. These sutures served the double purpose of closely applying the vagina to the stump, especially in the angles of the wound, and of controlling oozing from the uterus. The margins of the vagina were fastened by superficial sutures to the mucous membrane of the cervical canal, and the remainder of the wound closed in a transverse line, except at the angles where drainage was provided for. The vagina was dressed with gauze to prevent pouching or pocketing between the opposing raw surfaces. Thirty-eight minutes were consumed in performing the operation.

She made a very fair recovery, considering her condition at the time of the operation. The suppurating tumor having been removed, the temperature dropped, but on the seventh day, when the mattress sutures cut into the tissues the temperature reached 103 degrees, but came down immediately upon the removal of the stitches. From that time on her recovery was uninterrupted. The uterus mounted higher in the pelvis, the vaginal orifice contracted

to some extent, and the vagina, rectum, and bladder remained in their normal positions.

She was dismissed on the tenth day and returned to the laborious duties of a mountain farmer's wife. She has been well two and a half years, without any tendency to recurrence of the prolapsus.

ABSCESS OF THE SPLEEN SUCCESSFULLY TREATED BY ASPIRATION.

By J. W. GRIGGS, M.D., West Point, Ga.

Medical literature usually gives an insight into pathological conditions of the different organs in no uncertain way. Often the subjects treated are at once exhaustive and satisfactory, but in regard to the caption of this monograph there is much yet to be learned, and it behooves each of us, controlled by the sturdy master "experience," to add our quota toward unraveling the mysteries surrounding this meagerly investigated organ. It is my intention to present to this Association a case which came under my care and was successfully treated in a conservative manner. It conclusively established opinions long entertained by the writer in reference to the management of affections of the spleen, drawn from a previous experience in the treatment of abscesses of the liver.

Wesley Wood, a youth of fourteen years of age, was taken suddenly ill, and a physician was called, who, upon ascertaining that the boy had been eating chestnuts, pronounced the affection acute indigestion. The usual remedies were instituted, and even before the febrile symptoms had entirely subsided he was dismissed as convalescent. A few days thereafter I was approached by the father of the boy, who insisted upon my going to see his son, saying that he was not doing well. Having always been the family physician, I consented. The boy presented an anxious appearance, hectic flush, temperature 104 degrees, respiration 30 per minute, very restless, slight tympanitis, tume-

faction in region of the spleen; enough fluctuation to arouse suspicion of peri-splenic abscess. I remembered seeing the boy one year previous fall while playing at school. Frolicking with some of his fellows he fell across the sharp edge of a desk. I carefully considered this history and kept it in mind during the subsequent management of the case. Treatment inaugurated was based on general principles. About one week elapsed when decided fluctuation was manifest. I resolved to make an exploration, and for the purpose an aspirator was used. A medium-sized needle was most convenient, and over a quart of sero-pus was drawn off. In appearance it was oily and greenish, somewhat the color of bile. The patient slept well the night following; fever subsided; skin became moist and the anxious expression gave way to a hopeful issue of the case. This condition was, however, ephemeral; about the sixth day a reaccumulation became apparent. Meantime, I consulted with two of my special friends, highly skilled confrères in surgery; they counseled opening the abdomen and spleen and stitching the edges of the spleen to the outer opening, then packing with gauze and treating the case on aseptic principles, which was plausible and sustained by many noted authorities on this and kindred subjects. However, I was resolved to do this as a "dernier ressort." About ten days subsequent to the first operation I instituted a more heroic measure, in so much that in place of the medium needle, as before, I attached the trocar to the aspirator, thereby more thoroughly evacuating the fluid contained in the sac. Nearly two quarts of fluid were drawn off. The pus presented great degeneration. Could have been easily mistaken for pus incident to abscess of the liver. I took a specimen to a neighboring microscopist, but nothing was determined by which any positive results could be arrived at, as they were too hastily prepared to be serviceable. The patient began to have some appetite. Ordered supportive

treatment, iron in various combinations, hoping to restore the blood to its normal acting upon the theory of leucocytes predominating in affections of the spleen. Horlick's malted milk and beef jelly constituted the chief diet, and rapidly regained strength and became more cheerful, but the accumulation was again apparent, which was about two weeks after the second aspiration; the fluid was withdrawn and differed from the former in character—the pus bore the semblance of "healthy pus," the color was devoid of the greenish hue and less offensive. The patient recuperated in health and soon began outdoor exercise, and made a perfect recovery; while it was necessarily slow, he grew to an almost perfect physical manhood and weighs about one hundred and eighty pounds. He has never had a pain in the region of the spleen, nor indeed in any portion of the abdomen. This is but another evidence of conservatism in surgery, demonstrating the axiom that while the knife is more in touch with scientific advancement in the subject under discussion, yet in this one case the aspirator proved its most valued substitute.

A RARE CASE.

By F. E. TARVER, M.D., Augusta, Ga.

I make no apology for this paper except the rarity of the case, it being somewhat of an anatomical curiosity.

About twelve years ago a baby was born in Burke county. It soon became rumored that this baby was deformed. I took occasion to call and asked permission to examine the infant. (I had at one time practiced for the family.) The request was readily granted. In conversation with the mother, I learned that the baby was a girl and was unlike any she had ever seen. At this time the infant was five or six weeks old, and the mother then had four or five children, all of whom were healthy and perfectly formed.

The infant was exposed for examination, and I found to my surprise the following condition:

The vulva was very large and very much protruded, widely separated at the top, with a cavity just under the pubic bone, where the urethra should have been. There was a small section of sphincter muscle; no sign of urethra; an oblong transverse cavity just under the pubic bone about an inch and a quarter by half an inch wide.

The labia minora were very prominent and thick. The labia majora very long and thin, with a "V"-shaped opening at the top, extending nearly or quite through the mons veneris and separated from three quarters to one inch wide just in front of the pubic bone.

There was a small strip of bladder tissue lying on top of the vagina, and just under the pubic bone, on either side

of which the ureters emptied, pouring the water over the vulva and limbs of the child in an almost continuous flow. The ureters were much elongated. There was no union of the parts from the sphincter of the ureters up through the urethra, bladder, both labia and upper section of vulva, and for some little distance in front of and above pubic bone. The vagina and pubic bone were perfectly formed. The lower part of vulva was normal. Even at that age there was decided irritation over the parts which the urine kept continually wet.

The mother asked my opinion, and I advised an operation. She was opposed to that and called a surgeon from a neighboring town. He thought best to postpone the operation until the child grew stronger.

About six years after I was called to see the child. I found the whole of inside of lower limbs excoriated, with ulcers in and around the vulva, and a chronic irritation in and around the oblong cavity before mentioned. Her condition was virtually the same except that it was greatly exaggerated. The labia majora was much longer, thinner and very much more separated at the top. The labia minora immense, very prominent and lapping together so as to almost cover the oblong cavity. The "V"-shaped notch in front of pubic bone was much wider and filled with mucous membrane.

The child was in an awful condition. She never wore dry clothes; she slept in a wet bed; and, as a consequence, was debarred from nearly all the social advantages natural to a child of her age.

I again advised an operation, but my consultant still thought best to postpone. At the age of eight years matters were complicated by the appearance of her menses, which were regular and full, but she did not show the development which usually accompanies this period in a girl's life. I tried every form of urinal, with not only no

benefit but often with positive injury. I had several made from original designs, but with no better success.

About this time the consulting surgeon died, and a short time after I moved from that neighborhood. The patient then was nine or ten years old, and had begun to appreciate her condition. Last October she was brought to my office. Her parents had consented, if I still advised an operation, to have it performed at once. The patient was willing. She was then so annoyed and embarrassed that she preferred death to long life of this torture. She was now thirteen years old.

I made a thorough examination and concluded that her chances for a successful operation were less than when last seen, but there was still some hope of benefit, if not of a cure.

I found the patient thin, pale, poorly nourished—ill in every sense of the term. Her condition was very distressing, and the parents were very apprehensive. I again advised an operation, and called Dr. Thomas R. Wright in consultation. After a careful examination he agreed with me.

At this time her condition was an extreme exaggeration of the first, and while neither of us were very sanguine in regard to the result, we thought we could do little harm in case of failure, and if successful she would have a new lease on life.

Nothing new was revealed at this examination. There was only a small section of the sphincter of urethra, about an eighth of an inch long; no vestige of the urethra. The labia minora had grown larger, more prominent and was honey-combed in every direction by ulcers. The labia majora longer, thinner and much wider separated at top of vulva. The intervening space filled with mucous membrane. The "V"-shaped notch that extended through the mons veneris was wider; the transverse opening just under pubic line was much enlarged.

There was a small strip of bladder tissue lying just above the vagina, on either side of which the ureters emptied. The whole vulva was in a chronic state of inflammation, with ulcers scattered not only over the vulva but the whole of the lower limbs.

We could find but few cases of this peculiar defect; as a consequence our operation must be, to a certain extent, original. Several modes were discussed only to be discarded as soon as analyzed.

We finally decided on the following:

After due preparation we began by dissecting a two-thirds circular flap out of the mucous membrane in front of and above the pubic bone. This dissection was two inches or more in diameter and was from above the transverse cavity, continued down on either side, and wide enough to form the urethra. This was continued down to the section of the sphincter muscle. The dissected flaps were brought together and closed in the usual way, down to the sphincter, through and around which we inserted one or more circular stitches. A glass tube was then inserted through the new made urethra, and fastened with plaster, etc. Over the end of the glass tube was inserted a rubber tube (one yard in length) filled with water, for the purpose of producing gentle suction on the fluids that would accumulate in the bladder. This tube emptied into a vessel by the side of the bed, and succeeded nicely. All of this we supported by various forms of bandages and pads. This step in the operation was successful.

We now had the labia to close, the denuded surface to cover, and after dissection to support the new-made tissue. This was done by carrying the dissection a little higher up in the "V"-shaped notch; paring the edge of the vulva, trimming the labia minora to normal size, and bringing the whole together with the usual form of stitches, except that we inserted one or two very stout sutures, deep and wide to support the others. This was also protected with

the usual form of pads and bandages. This step was also successful.

We begun the first step in stitching the bladder by removing the rubber tube and using a cork in the glass one, which was removed every hour and a half or two hours to pass urine, and then replaced.

During the whole of this time the tube had been duly removed, cleansed and the bladder thoroughly irrigated with boracic acid to prevent the accumulation always so troublesome in these cases. As soon as union was complete, we begun to dilate with more energy and found this the most difficult if not the most serious. This was to stretch or dilate the new-made bladder, which by this time was very much shrunken. We found it very difficult to get a support that was substantial and stationary. After trying various plans with only partial success, we took an oblong cork, cut a hole in the end of it, so as to fit the bottle end of a rubber nipple which was tightly corked into the hole. The cork was then fashioned to fit the inside of the vulva and put proper pressure on the mouth of the urethra.

After padding with gauze an ordinary condom was stretched over the whole and tied in front and back. This end of the nipple was inserted into the vagina, and the cork placed between the labia. We tried to support this with an ordinary T-bandage, but found it would not keep uniform pressure. We then had a stout belt made, supported by whalebone to prevent wrinkling and to take the place of a T-bandage. To the back of this belt was fastened a four-inch rubber bandage. This rubber was split in front to below the vulva. By crossing these two ends in a certain manner, they gave support to both the cork and the outside vulva when fastened in front. When necessary to pass water she could detach the front part of the bandage and replace it herself. The glass tube was dispensed with,

of course, except for the purpose of washing out the bladder occasionally. Within the next three or four weeks, with this support, she was able to hold her urine from one and a half to two hours. She has worn this support for about five months intermittently, and is able to hold her urine from three to four hours without it. She usually passes water from two to four times at night, and during the day about every four hours. She now wears dry clothes day and night. But this is not all. She has undergone the most remarkable change. She is robust, well nourished, and is rapidly acquiring the development, both physical and mental, so long delayed with her. Not only are her parents delighted, but she is one of the happiest little girls in her section.

We look on this case as one above the usual interest, and if our experience will be the means of helping some one else out of a similar bondage we will feel amply repaid.

A STUDY OF THE REFRACTION OF ONE THOUSAND EYES.

By C. H. PEETE, M.D., Macon, Ga.

The only excuse that I offer for presenting to you a subject so bare of interest to the general practitioner is that it is one affording interest of such magnitude to the ophthalmologist that it cannot be overlooked. The subject of refraction is of as much, if not of more importance, than any one thing presenting itself to the specialist in his daily labors. While other parts of our work require equally prominent places in our minds, the one under consideration requires more frequent application; and I might say, continually claims our attention. It is a condition or disease, so to speak, productive of many forms of disturbances, some of which prove very troublesome to the general practitioner, as well as the patient. It is sometimes made manifest in ways that seem to the ordinary observer to point so plainly to disease of other parts of the body, that this most important branch of surgery is entirely unthought of as even a possible cause of the symptoms. It is not my purpose, at this point, to look into the symptoms and reflexes produced by existing errors of refraction, or to make any suggestions regarding the advantages made possible by their early correction.

It is a subject so important to us as physicians, that it should be kept prominently before us, that we may become more familiar with its dealings with our patients. In my work I do not find it necessary to correct errors of re-

fraction in as large a per cent. of cases as some who have made similar reports.

Dr. H. Bert Ellis, writing on this subject, states that 87 per cent. of all his eye cases required correction of errors of refraction.

Dr. George M. Gould, in a paper on this line, states that 93 per cent. of his eye patients required correction of refraction.

While I have not noted the per cent. of cases requiring correction relative to the total number of eye cases, I unhesitatingly say that the per cent. will fall far short of that reported by these gentlemen.

The one thousand eyes, the refraction of which I wish to speak, have been selected from my books consecutively. I have chosen only cases in which a correction of both eyes was necessary, ignoring sex and age, since there are very few presbyopes recorded. In tablet form I first noted the general refraction of the one thousand eyes, 73 per cent. being astigmatic, 27 per cent. non-astigmatic, being somewhat less than 3 astigmatic to one non-astigmatic eye. The tables show that 78 per cent. were hyperopic, 18 per cent. myopic, with 40 eyes hyperopic in one meridian, and myopic in the other.

In the hyperopic cases I found 30 per cent. having simple hypermetropia, while 70 per cent. had astigmatism, simple or compound, the simple amounting to 16 per cent., the compound 54 per cent. of the hyperopic cases. Among the myopes I find 18 per cent. having simple myopia, and 82 per cent. with astigmatism, simple or compound; the simple being 47½ per cent. and the compound 34½ per cent. of the myopic cases. In my mixed astigmatic cases I find that out of the whole number 40, hypermetropia predominates in 22 eyes, while myopia predominates in 18. It can be seen by the above figures that in my cases of hypermetropic astigmatism the compound outnumber the simple by more than

three times the number, while in the myopic astigmatic cases the simple shows to be one and one-third times as numerous as the compound. Of the 730 astigmatic eyes shown in this report, 74.2 per cent. are hypermotropic, 20.3 per cent. myopic, while 5.5 per cent. have mixed errors. When considering the axes of the 730 eyes, I found 43 per cent. to be hypermetropic, with axes at 90 per cent.; 10 per cent. hypermetropic, with axes at 180 per cent.; 24 per cent. hypermetropic, with axes oblique, that is the axes being anything other than at 90 or 180.

I found 10 per cent. to be myopic, with axes 180; 4 per cent. myopic, with axes at 90, and 9 per cent. myopic, with axes oblique.

Of the 237 simple hypermetropic cases, only 27 required a correction of .50 D. or less, and 134 required 2.00 D. or less.

Of the 33 simple myopic cases, 2 required a correction of .50 D. or less, and 17 eyes, or 50 per cent., required 2.00 D. or less, and 8 eyes, or 24 per cent., had between 5.5 and 18.00 D.

While this is true regarding the correction of high degrees in myopia, I only found 8 eyes, or 3 1-3 per cent. of the hypermetropic cases requiring a correction of 5.50 or more.

As I have stated, out of the one thousand eyes, I found 730 astigmatic, 40 being hypermetropic in one meridian and myopic in the other. There were 502 hypermetropic astigmatic eyes, and 148 with myopic astigmatism. Of all astigmatic eyes, hyperopic and myopic combined, 72 per cent. required correction of .75 D. or less, and 88 per cent. required 1.75 D. or less; 46 per cent. of all astigmatic eyes had axes at 90, 21 per cent. had axes at 180, and 33 per cent. had axes oblique.

Of the hypermetropic astigmatic eyes, 57 per cent. had

axes according to the rule at 90, 14 per cent. had axes against the rule at 180.

Of the myopic astigmatic eyes 46½ per cent. had axes according to the rule at 180, and 15½ per cent. had axes against the rule at 90; 38 per cent. with axes oblique against 30 per cent. of hypermetropic with axes oblique, making in my case the oblique relatively more numerous in the myopes.

In the deviation of the axes from 90 and 180, the tendency in the hyperopic eyes is to 90, and in the myopic to 180.

In addition to the above, I give below a table of the one thousand eyes divided according to the conditions existing, giving the number of eyes and per cent. of the whole existing in each condition relative to the number examined:

	Eyes.	Per Cent.
Simple H.	230	23.7
Simple M.	33	3.3
Simple H. A.	123	12.0
Simple M. A.	86	8.6
Compound H. A.	419	41.9
Compound M. A.	62	6.2
Mixed A.	40	4.0
Astigmatic	730	73.0
Non-astigmatic	270	27.0
Hyp. A. axes 90	311	31.1
Hyp. A. axes 180.	75	7.5
Hyp. A. oblique	178	17.8
Myop. A. axes 180.	77	7.7
Myop. A. axes 90.	26	2.6
Myop. A. oblique	63	6.3

In 40 mixed A. H. predominates in 22.
In 40 mixed A. M. predominates in 18.

It will be noticed that in my simple hypermetropic cases

only 27 were given a correction of .50 D. or less, and in my simple myopic cases only 2 were given as low as .50 D., while in all I have reported 88 per cent. required 1.75 D. or less. While it is true that sometimes small errors cause more trouble, produce more trying symptoms, and are harder made comfortable, I do not think it wise or best to correct all errors found. It may seem to some who correct every error of refraction found that this statement is without reason; surely, he will say, no error should go uncorrected, even to the .25 D. in hypermetropes. We know from experience that the youth is hypermetropic and becomes myopic as he develops in literary and scientific pursuits. Let us take this fact into consideration, and in cases where it can be withheld, to give such assistance as we can without the cumbersome appliances sought by so many. I grant you that when a patient presents himself to me, who is constantly taxing his eyes with close, fine work, and who, after the use of his eyes for such work, complains of symptoms we can readily attribute to their use, I would not hesitate, after finding no other cause for the suffering, to supply him with proper glasses, it matters not how small the degree.

In astigmatism I find it necessary to correct small errors much more frequently than simple errors of a much larger degree; in fact when there are symptoms warranting a correction at all, I always correct fully the amount of astigmatism found.

Leaving a great deal unsaid that might be of interest to the refractionist, I will add a few remarks relative to the reflexes. I have not taken the pains to notice in tabular form the percentage of the different reflexes, but in a very large majority of cases, I have been confronted by complaints of headaches of fronto-temporal variety, accompanied in most instances by a blurring of the vision; in a few of the cases there appeared after reading a few moments to be a perfect blank. In most cases of the headaches there proved

to be astigmatism, while in some were found simple hypermetropia of only .25 D., which when corrected gave perfect relief. I think I am safe in saying that in every case where errors of refraction exist sufficient to cause discomfort, we will find conjunctivitis of such a degree as to require some attention. It may be a very low degree of error, and yet there will be presented a severe conjunctivitis, with possibly considerable marginal blepharitis. Do not understand me to say, that with every case of conjunctivitis we will find errors of refraction existing, yet it is far from true. There are many cases of conjunctivitis other than this, but I repeat the statement that errors of refraction sufficient to be troublesome are always accompanied by conjunctival congestion in some degree. In correcting the errors of refraction per se we have not always fulfilled our obligation to the patient. We often find unbalanced muscles producing conditions or symptoms similar to those produced by uncorrected errors of refraction. These conditions—exophoria, esophoria, hypophoria and cataphoria of low degree—can be overcome by a decentering of the lens. But beyond the lines drawn between operative and non-operative cases by Dr. G. C. Savage, of Nashville, Tenn., I agree with him should be treated by an operation, followed by exercise of the muscles at fault. In a paper entitled "Partial Tenotomy, a Radical Cure for Heterophoralgia," read before this Association at its meeting in Americus in 1893, I fully set forth my views on this subject, so will not pursue it further here. After reading many articles written by able refractionists, and hearing the subject freely discussed by scientific men from different parts of the country, I am still in doubt as to the reliability of ophthalmoscopic examinations for correcting errors of refraction. I make it a rule to examine my cases with the ophthalmoscope, and while I feel certain that my accommodation has been relaxed, I am uncertain about the results, and alto-

gether think it is unsafe in the hands of a great majority of oculists for this purpose. In every case considered in this report, except a few presbyopes, I have used discs containing 1-50 grain each of homatropine and cocaine, or a solution of homatropine hydrobromate of 8 grains to the ounce. In only two of the cases have I been unable to secure complete relaxation of the accommodation by one of these preparations. In these two I resorted to a solution of atropia, 2 grains to the ounce, used four times a day for three days, with good results. In every case I have used the ophthalmometer, which I find indispensable. I do not find that the instrument can be relied upon for the amount of the astigmatism, or axes of cylinders in every case, but in most cases I have found it of great assistance and a pleasure. In a few cases I have found it of no value whatever as to the amount of error, or the position of the axis. In one case it showed astigmatism of 2.50 D. with axis at 60, yet the patient could not be induced to accept more than a 75 degree lense, and its axis at 90.

THE ABORTIVE TREATMENT OF ACUTE SUPPURATIVE INGUINAL ADENITIS BY PRESSURE BANDAGE.

By HENRY R. SLACK, PH.M., M.D., LaGrange, Ga.

There are few simple complications of chancroid and urethritis that worry the physician and patient more than an acute suppurating bubo. The classic treatment with tincture iodine, mercury iodide ointment, belladonna ointment, etc., has in my experience been almost barren of results in aborting this trouble.

The practice of Auspitz of puncturing the inflamed gland before suppuration has taken place, and then introducing a probe and breaking up the glandular septa, so that the substance of the gland is discharged through the external wound, has found but few followers. It is, however, highly indorsed by Bumstead. Taylor recommends the injection into their substance twenty minims of a solution of carbolic acid (8 gr. to the oz.) 0.5 gr. to 30 c.c. of water. This he claims invariably aborted suppuration.

Lydston advocates "the early and complete extirpation of all buboes." The danger of infecting the glands is great by any of these methods, and besides, they necessitate for their successful practice rest in bed. This is a requirement most seriously objected to by a large majority of patients in private practice. They want to be cured without being put to bed or the use of iodoform.

I must confess I had almost despaired of finding a safe and successful abortive treatment for bubo, until last winter, at the Johns Hopkins Hospital in the genito-urinary

clinic, I saw Dr. Gaither apply the pressure bandage. I have seen it used in ten cases, most of which were in Dr. Gaither's clinic, though some were in my private practice, with the following results:

One patient complained that it increased the pain, which was so intense he could not allow the bandage to remain on over a few hours. In another case, where fluctuation was distinctly felt, the suppuration continued, and after the third day an incision was made. In the remaining eight the bubo was aborted, including two in which suppuration had begun. The following cases are typical.

Case 1.—C. B., white, aged eighteen, November 16, 1895. Has had discharge from urethra three weeks. First attack. Some pain on micturition and increase in frequency. Discharge profuse and purulent. Has inflammatory bubo on left side, size of a horse-chestnut. Skin covering swelling red. Considerable pain on pressure, but no suppuration.

Treatment.—Injection bichloride mercury 1 to 20,000 and pressure bandage.

November 21. The swelling of the gland almost gone. No evidence of suppuration. Bandage reapplied.

Case 2.—A. P., colored, aged twenty-four, December 27, 1895. Patient has had bubo on left side for three weeks. He says it was preceded by two small discharging sores on either side of the frenum, which can still be seen, though nearly healed. There is a large inflammatory bubo in the left groin; glands are matted together and show evidence of suppuration over a small area. Skin covering swelling is adherent and glistening.

Treatment.—Pressure bandage applied.

January 2, 1896. Bubo smaller, harder and less painful. Signs of suppuration have disappeared. Bandage reapplied.

January 7. Bubo about gone, not painful. Bandage removed.

Case 3.—J. S., colored, aged twenty-five, cook in hotel, October 6, 1896. Has slight discharge from urethra; inflammatory bubo on both sides. Right as large as hen's egg and so painful can hardly walk; left about size of hickory-nut and painful on pressure, but no fluctuation in either. Skin covering glands adherent and glistening.

Treatment.—Balsam mixture and pressure bandage.

Patient said the bandage relieved the pain so much that he could walk with greater ease.

October 9. Complains that pain is more intense in right groin. The gland is larger and suppuration has begun. Left side bubo is smaller, harder and all pain has disappeared. Reapplied pressure bandage.

October 20. "Feels all right now." Right bubo smaller than a hickory-nut and left gland only slightly enlarged. No pain in either. Bandage removed.

Thus it will be seen that the bandage was a success in aborting the bubo in 80 per cent. of the cases in which used. The cases cited represent two gonorrheal and one chancroidal bubo, which was about the proportion treated.

Of course all buboes do not reach the operative stage. Whether treated or not, a good many will subside before suppuration begins.

Now a word as to the method of applying this bandage, about which the text-books are very reticent. This cannot better be given than in Dr. Gaither's own language. "A piece of cotton as large as the fist is folded in on itself again and again until it has the shape of the bubo, and when placed on it does not completely cover it. This is carefully adjusted and a wad of tightly compressed cotton as large as a cocoanut placed over it. Small pieces of cotton are also used on the inner and outer surfaces of the thigh to prevent chafing, and a very tight spica bandage put on."

The pressure bandage treatment for acute suppurative inguinal adenitis has in my experience been a success. It has the following points to recommend it above any other abortive treatment thus far suggested.

1st. It is safe.

2d. It generally reduces the pain.

3d. It allows the patient to continue his usual avocation without interruption.

4th. It gives a large number of successful cases.

ASTHENOPIA.

By J. H. SHORTER, M.D., Macon, Ga.

When requested to prepare a paper for such a gathering as this, not the least difficulty of the task is, I think, the choice of a subject. Not that there is a dearth of interesting ones—on the contrary, their very abundance gives the "embarras de choix." One is always tempted to make such paper the vehicle for discussion of some very abstruse subject or the report of some exceedingly rare affection, an example of which may have come under one's observation and tested his power of diagnosis; but I am convinced that the best paper to lay before a gathering such as this, of the thoughtful, representative practical men of the profession, is one which, while treating of a subject sufficiently frequent to be of importance, is not so common or trivial as to be hackneyed; in other words, a subject of practical interest which may come to the attention of the family adviser as well as that of the oculist every day. The subject of this paper seems to me to entirely answer these conditions.

The term asthenopia, like that of neuralgia, is a careful and convenient one, though very incomplete as a diagnostic verdict, and expresses nothing as to the pathology of the affection which the patient complains of. Meaning literally "absence of strength of eye," or weakness of seeing—from "ops" and "asthenos," the term could rightly be applied to designate impairment of sight or inability from any cause, but in actual practice we restrict its application to descriptions of functional troubles, causing annoyance in the use of such eyes, which are in themselves seem-

ingly healthy and without any discoverable morbid change or departure from the normal, except, perhaps, as to shape. As is evident from the meaning of the term and nature of the affection, asthenopia may be associated with or be the result of one or more of several different conditions, and as a fact, authorities divide it into three or four kinds, according to the anatomical or physiological abnormality, which seems as the base of the trouble; hence, asthenopic accommodation, muscular, intraocular, or nervous. Of the three groups the first comprises by far the greater number of cases and gives rise to much of the routine work of the average oculist.

The patient, often a young person, comes with complaint of inability to use the eyes for near work or for any length of time. Examination shows clear media and normal fundus, but an error of refraction (which is frequently a hyperopia or astigmatism); the proper glasses are adjusted, and the relief from symptoms complained of is often very prompt. In such case the treatment and cure follow on the diagnosis and all seems simple; but some years ago many such patients, victims of erroneous diagnosis, were subjected to vigorous constitutional antiphlogistic treatment by blistering, internal medication, confinement in dark room, etc., etc., for a presumed graver inflammatory disease of optic nerve or retina. For removing such erroneous conception and furnishing the correct interpretation of the condition underlying and causing such symptoms, all credit must be given to the genius of the great physiologist, Donders, long-time professor at Utrecht.

The subject of refraction has been pretty thoroughly worked over, and many devices suggested and injurious apparatus perfected for determining with accuracy the nature of the refraction of the eyes. But many causes still remaining unrelieved and the annoying symptoms still continuing, even after the most accurate correction of all re-

fractive errors, directed the attention in more recent times to the investigation of the condition of the exterior muscles of the eye, with the result of finding in numerous cases, and often very troublesome ones, that an abnormality of function of these, or lack of equilibrium in action, between one set and their antagonists, was a potent and sufficient factor in production of all the annoying eye or head symptoms, and that once all the muscles had been put under condition of equipoise and in state to act in harmony, all symptoms of asthenopia disappeared.

Notably as an enthusiastic worker in this field and really one of the pioneers, the name of Dr. George Stevens, of New York City, ought to be mentioned, for much extremely valuable work has been done under his leadership.

The subject of eye-strain has engaged the attention of many oculists and neurologists in recent years, who entered with earnestness into the study of the matter, and doubtless their labors have brought forth much that has been of great practical value; but, as has been the history of almost every new department of medical investigation, too great enthusiasm thrown into the subject by over-sanguine theorists bade fair to make a fad of it, and to attribute to eye-strain almost every functional ailment (except where, perhaps, already referred to uterine or ovarian reflex), with the expectation and promise of a speedy cure to follow the correction of the condition. Naturally, the result of treatment in not a few instances has been disappointment rather than success, as is so often the case where too great generalizing is indulged in. Very frequent and most annoying trouble doubtless results from the persistent eye-strain accompanying a refractive error or muscular insufficiency, and great benefit is conferred on many sufferers by their painstaking and proper correction, as all of us have so many times seen, but that a correction of muscular insufficiency can cure confirmed hysteria or epilepsy, I have not in my experience seen, nor am I able to credit it.

I allude to this for reason that there has been for a few years past a real furor (happily now abating somewhat) for attributing most functional nervous ailments to eye-strain, and the strain itself as result of impaired muscular action, only to be corrected by tenotomies or other work on the motor apparatus of the eye.

I will mention one case as illustrating, "it is true in a rather exaggerated way," this tendency to go to extremes in following up a new line of thought in surgical treatment: Mrs. T.D.L., aged twenty-two, married three years, consulted me a few years ago in New York, complaining of inability to use eyes with comfort in near work, and also on account of a slight stare in the left eye. Examination showed a very slight hyperopia, otherwise each eye was normal; there was, however, easily made out a marked impairment of immobility of the globes, especially of the left.

She seemed a nervous, rather anemic looking young woman and gave a history of asthenopia, which, though occasioning some annoyance during her girlhood and school days, had not been really excessive or interfered greatly with use of the eyes until after marriage. After that it became troublesome, and two years before I saw her she had consulted a reliable oculist, who prescribed glasses to correct the slight degree of ametropia. But the annoyance continuing, she visited another oculist, who diagnosed the trouble as being entirely muscular and that a tenotomy offered the only hope of relief. She consented and one was done on the external rectus of the left eye. This not affording relief, was followed by a similar procedure in the right. The trouble still continuing, and being a docile patient, she consented to further operations, and a tenotomy was done this time on a superior rectus, and then yet another. First and last there was no less than fourteen tenotomies made, divided between the two eyes, and at the end without any permanent relief of the asthenopic symptoms, but

with result of very decided impairment of the normal mobility of the globe. I suggested continuing the use of the glasses, daily cold sponge bathing, later a long stay in the mountains, nutritive diet, life in the open air all day, and ten hours sleep at night, with almost complete rest of the eyes. Six months made a great change in the general condition, and she reported the gratifying news that she could read an entire hour without appreciable annoyance.

This brings us to the remaining, or third division—asthenopia from systemic causes, so-called nervous asthenopia, for the case just described may be regarded as a most striking illustration of such condition. Not having previously seen this patient, I would not state that there was no muscular insufficiency, for her physician, being a conscientious man and capable oculist, was no doubt able by phorometer and other tests to demonstrate a heterophoria, which in fact we can often do when we seek for it, but as the results from subsequent different treatments seem to prove such insufficiency as not the chief or basic cause of the trouble, my experience convinces me that many more similar cases, though not so marked as this, are of constitutional origin, and may be greatly benefited by proper hygienic living, including rest to the eyes.

I do not for an instant wish to underestimate the great practical value of the work done in investigation of abnormalities of the intrinsic eye muscles, for all oculists have seen too many most satisfactory cures of really distressing affections by proper correction of an insufficiency, even severe troubles, the relief of which baffled all other treatment. In this connection I may mention a case which interested me very much. The patient was a builder, who for some years had been suffering with vertigo, the attacks of which had become so severe, especially when trying to walk or stand on any narrow or insecure foundation, that he could no longer walk across the beams of an unfinished

house without serious risk of his life. He had had long treatment with various nervines, etc., but without benefit. He then consulted a skilled oculist who discovered a marked heterophoria, which he accurately corrected. The relief from vertigo was immediate, and when I saw him last the cure remained complete, and the man could mount a ladder or walk the beam of a house as steadily as any workman. And there are numberless cases of relief from lesser troubles, but I do hold that all cases of asthenopia are due to ametropia or to heterophoria, and much greater attention than is usually accorded should be given to the general bodily condition and habits of life of the patient. And this is really the point to this paper, for, of course, most that has been said above is after all somewhat elementary, but I think that it is always well for us to keep in mind the fact that the eyes with their appendages may be in themselves healthy and of normal shape, but at same time be incapable of being used with comfort for reason of some systemic debility. Such cases of asthenopia are frequently associated with other symptoms of neurasthenia, but some may come under our observation where the eye fatigue was the sole indication of any general functional nervous affection. Symptoms of this kind, which might be called nervous asthenopia, are in the main such as exist in the kind due to organic abnormalities, as in asthenopia from lack of muscular equilibrium or need of correcting glasses; hence the differential diagnosis is made alone by exclusion, satisfying ourselves first that the eyes are organically healthy, and by careful objective and subjective examination that there is no error of refraction nor any muscular insufficiency to account for the annoyance in use of the eyes. There is an amblyopia, sometimes of high degree, which is also of hysterical origin and occasionally associated with nervous asthenopia. Furthermore, it is

not to be forgotten that two or all causes of asthenopia may be associated in the same case.

A patient presents herself complaining of inability to do close work for any length of time without obscurities of vision, pain in the eyes, heaviness of lids, etc. An examination discloses an ametropia or heterophoria, or both combined, and either are ample in degree to be the cause of all the discomfort complained of. We correct accurately the error of refraction by tenotomy or otherwise put the muscles into state of complete equilibrium, and dismiss patient with the self-congratulatory feeling that we have relieved all of her ailments; but in a month she presents herself again and to our disgust reports that though she thought herself for awhile somewhat better, she still could not use the eyes with any satisfaction and would despair if not relieved. This hypothetical case illustrates a combination of causes. The organized defects have been neutralized, but the neurasthenic element remains.

In conclusion, I will mention only a few cases taken at random from my record book. None of them essentially of accommodation or of muscular asthenopia, for of these latter all oculists have had scores of cases successfully treated, simply correcting such defects as the examination brings to light, and concerning them there is nothing especial to say. These are cases which may rightly be put under head of nervous asthenopia, simple or complicated.

Mrs. L. M., aged twenty-three, consulted me with complaint of the usual symptoms of asthenopia. Any excessive amount of reading or sewing caused, she claimed, extreme annoyance, amounting even to pain in the eyes and actual headache. The patient seemed anemic and of nervous disposition. She had been examined by a competent oculist, who told her that he found no error of refraction, but she felt sure that glasses would relieve her trouble, as two friends suffering as she did had been entirely cured by

wearing them. A careful testing shows vision above normal and no error of refraction. Thorough atropinizing brought out only one-eighth diopter of hypermetropia, and the patient was a devotee to society and the trouble was worse during the social season. She was an early riser, even when late to bed. My advice was to build her up with tonics, regularly three meals of plain food each day, early to bed, an extra amount of sleep and as much out-of-door life as possible. She reported at end of some weeks feeling stronger (the general appearance was certainly much better), that the eyes, though less troublesome, were still not comfortable. Chiefly as satisfaction, I gave her glasses one-eighth of diopters to wear, and to continue the former rêgime. She presented herself a few weeks later, seemingly very happy, and remarked: "I feel ever so much stronger, and since wearing the glasses I can read and see without trouble, and my eyes don't burn any more." This was evidently a case which, in addition to the neurasthenia probably consequent of anemia, involved a physical element, for I cannot believe that the optical effect or accommodative relief from wearing a one-eighth diopter convex spherical glass can amount to anything. Hence, we must attribute all the relief afforded by the glasses to the gratification of her desire and mental stimulus afforded thereby.

Mr. Chas. L. R., aged forty, consulted me about annoyances in use of the eye, which had grown worse during the last two years. After any considerable writing the eyes felt heavy, hot and somewhat painful. The patient is engaged in office work a good part of the time by gaslight and at night, and leads a sedentary life, taking very little exercise. A heavy plethoric appearance, florid complexion, conjunctivæ rather red, apparently somewhat irritable, but no secretion. V. $\frac{20}{15}$. Most careful testing discloses absolutely normal fundus refraction and patient accepts no plus glass for distance. Although forty

years of age, the near point is still within very convenient distances from the eye. I ordered a mild collyrium and gave permission to use a weak — 0.50 D. glass for reading by gaslight. The patient returned at end of ten days. The use of the eye drops was soothing in effect, but in the main the dull heavy feeling was about the same. I saw him again at end of a month, but he could report no betterment. I thought then that lithemia or other blood condition might be at bottom of his trouble, and referred him to his family physician. The latter reported that the examination of urine showed diminished excretion, high specific gravity 1030, no albumin nor sugar nor casts. He put the patient on rigorous diet, insisted on largely increased amount of regular daily exercise, abstention from all forms of alcohol and copious drinking of a lithia water, with occasional purge. Under this regime the patient lost somewhat in health, but improvement in general condition was constant and steady, and at end of six weeks he reported himself as feeling lighter and better both in body and spirits than for years past, and (what was to me of course chiefly of interest), that the eyes were seemingly all right again. He could read for any reasonable time, even at night, without fatigue or the development of the heavy, burning feeling in eyes and lids complained of before.

Miss A. F., aged twenty-two, was a case I had under treatment a few years ago. She had always been in good health though for some time past had not usually enjoyed the uninterrupted sleep natural to a young person; for a year or more the eyes had given her considerable annoyance, especially when used for continuous sewing and reading. Bodily functions, digestion, urinary excretion and menstruation entirely normal. Examination of eyes showed emmetropia and normal muscular equilibrium. There was a slight conjunctival catarrh which I considered might have to do with the discomfort. This, however, readily

yielded to treatment, but the annoyance still continued. On investigating her habits of life, I ascertained that she was inordinately fond of coffee and gratified her taste very freely. As it seemed difficult to find out other cause of her trouble, I thought that intemperance in this respect might have to do with it, and persuaded her to give up coffee entirely, taking a cup of weak tea at breakfast instead (she had formerly taken two or three cups of coffee at each meal). The patient quickly showed improvement, and within a comparatively short time reported herself as relieved of all eye trouble. Perhaps it might be held that the better sleep which followed giving up excessive coffee-drinking was the chief factor in her improvement, and this may have had its influence, but I have seen some cases of asthenopia in patients who slept well, in whom beginning improvement and final relief from annoying symptoms could be traced, I was convinced, directly to abstention from coffee-drinking.

Cases of asthenopia, reflex to uterine displacement or ovarian disease are certainly not extremely rare.

This entire paper is, I fear, rather elementary and much of it suited to undergradutes, but it may perhaps point one or two lessons. First, not to promise too certainly sudden relief or rapid cure in cases of functional eye trouble, but to give always a guarded prognosis, if we would avoid risk of disappointment to ourselves and loss of confidence of the patient. Second and chiefly, not to confine our investigation exclusively to the eye itself and its appendages, but to extend it when necessary to the entire bodily functions, remembering that all patients complaining of asthenopia have, in addition to the visual organs, a digestive, genito-urinary and nervous system as well.

EUCAINE, WITH REPORT OF A CASE.

By D. D. QUILLAN, M.D., Athens, Ga.

It is not the purpose of the writer to enter into a discussion of the various uses of the new anesthetic, eucaine. The profession is familiar with the various, and I might say uncertain, effects of its twin derivative, cocaine. That the latter drug has been of undoubted value all know, but owing to its uncertain effects, it is used by the conscientious physician with great caution—he knowing that very small quantities often produce serious and even fatal results. If these results were produced by the quantity used, they could be avoided, but unfortunately they usually occur when least expected.

It has been claimed by some that eucaine is devoid of danger and produces no bad after effects—that there is no sloughing, as we sometimes have after the use of cocaine. Having seen many flattering reports of the use of eucaine and no reports of any bad effects following its use, prompted me to report the following case:

U. L. H., machinist, aged twenty-two, consulted me on Saturday, February 27, for phimosis. I advised circumcision, which was readily agreed to. After thoroughly washing the parts with soap and water, creoline and bichloride solutions, I injected about one drachm of a four per cent. solution of eucaine, in the line of intended incision encircling the organ, then applied phimosis forceps, introduced catgut sutures and cut off the foreskin, removed the forceps and clamped the penis with them—thus entirely preventing hemorrhage—tied sutures and applied dressing to cut surface of absorbent

cotton, sealed over with flexible collodion, completing the dressing by wrapping the entire organ in bichloride gauze. I noticed, immediately following the operation considerable swelling of the foreskin, but the patient experienced no inconvenience from it. On Monday, second day after the operation, the patient resumed his usual work. Four days after I noticed sloughing on both sides in the line of incision, but none on anterior or posterior surface; here we had union by first intention. I used antiseptic washings and dressings daily, and the patient continued his work until the tenth day after the operation. About 8 p.m. I was called hurriedly and found him suffering intense pain, beginning in the foreskin and passing along the organ through the pubic region extending to the spine. I also found clonic spasms of all the voluntary muscles, stiffness of the jaws, indicating tetanic spasms. I at once gave one-half grain sulph. morphine with 1-150 gr. of atropia hypodermically, and one drachm of sodium bromide per orem, followed in thirty minutes by 30 grains each of bromide potash and chloral hydrate. In about two hours the spasms were controlled, except in the left shoulder. This continued during the night and there was a tendency to return of spasm in all the muscles the following day; but it was controlled by bromide pot. and chloral hydrate. After this the patient made an uninterrupted recovery.

Did the eucaine have anything to do with the muscular spasms? It certainly produced sloughing of the tissue, which I think likely would not have occurred had I allowed the solution to bleed out of the tissue after making the incision.

I have reported this case to show that there is danger in eucaine, that it will cause sloughing if not allowed to bleed out of the tissue, and that it may be the cause of other bad symptoms, and that it is wise to be cautious in the use of new drugs.

OBSTETRIC SURGERY.

By JOSEPH EVE ALLEN, M.D., Augusta, Ga.

The scientific obstetrician of the present day has to be a surgeon, for the conditions he ordinarily meets with in practice, as well as all unusual accidents and emergencies, have to be treated according to principles that govern in surgery. During the past twenty-five years all progress in obstetrics has been along surgical lines, and it is certain that the achievements of the future lie also in this direction. The man, therefore, who would keep up with his profession and treat his patients according to the latest science, must bring to bear in midwifery practice everything that characterizes and makes successful the work of the modern practitioner of surgery.

The brilliant results that are now attained in obstetric surgery are due entirely to precision in diagnosis and rigid asepsis in technique. Before exact methods of diagnosis were known and the necessity for absolute cleanliness in operating recognized, the fear of puerperal fever prevented handling of the parturient uterus and effectually barred all advance in operative obstetrics. The average obstetrician was limited in conservative procedures to version and the forceps, while infantile life was sacrificed to a frightful extent by frequent resort to the perforator and the knife.

In preaseptic times few lying-women escaped some form of infection, and delivery was often accomplished by methods now known to have been improper. Puerperal fever was regarded as a specific affection and frequently raged with epidemic violence, sweeping off thousands of victims,

or leaving them permanent invalids suffering with chronic septic inflammations.

In lying-in hospitals the usual mortality from septicemia was from two to ten per cent. and even higher, and childbirth in such wards was justly looked upon as almost certain death.

The experience of the City Lying-in Hospital of London, which was made the text of Dr. Godson's address before the British Gynecological Society at its last annual meeting, is the common history of all such institutions. This hospital is one hundred and twenty-four years old, and it was quite a common occurrence for it to be closed on account of puerperal fever, while many thousand pounds have been spent in structural alterations, remodeling, demolitions, and rebuildings, carried out under the superintendence and advice of the best sanitarians of the day. All efforts had, however, failed to bring about more than temporary reduction of the death-rate prior to the time when the great discoveries of Semmelweiss and Lister wrought such a revolution in practice. In 1880 the mortality in this institution was one to nineteen. In 1886 the use of antiseptics was begun and that year 480 women were delivered without a single death.

The statistics of other public maternities also demonstrate the inestimable benefits arising from change of methods. Thus Leopold in 1887 records 3,089 deliveries, including many operative cases, without a death from septic infection. Slawiansky reports 176,646 labors occurring in Russian hospitals with a mortality of three-tenths of one per cent. and a morbidity of eight and five-tenths per cent. The Boston Lying-in Hospital in 1891 records 550 deliveries with no death. The Sloan Maternity of New York had one septic death in 3,000 cases, and the New York Maternity 957 deliveries with no death from infection.

Now, owing to the adoption of clean methods, the danger of sepsis is obviated, the number of conservative operations has greatly increased and embryotomy on the living child is seldom practiced, and perhaps is never justifiable. In well managed lying-in hospitals puerperal fever is a thing of the past, and a woman is here much more secure against the perils and dangers of childbirth than she could possibly be in the best of private homes.

While in hospitals maternal and infantile mortality has wonderfully diminished, the death-rate in private practice is still appallingly high. According to insurance reports quoted by Reynolds, in 2,183 insured women, 197 or 9.03 per cent. died of puerperal causes, and seventy-five per cent. of these deaths were from septicemia. Dr. Cullingworth, in a recent address before the Obstetrical Society of London, shows that the mortality from puerperal fever throughout England and Wales is just the same as it was before the beginning of the era of asepsis. In America examination of the mortuary reports of any of our cities will disclose many deaths from puerperal septicemia disguised as malaria, typhoid fever, la grippe, etc.

Unfortunately death-rates do not by any means show the full extent of the evil done by infection, because for every fatal case about ten patients survive the puerperium to drag out a miserable existence and furnish material to the gynecologist.

It is a lamentable fact that at present at least three-fourths of the deaths in childbirth outside of hospitals are absolutely preventable. This is a terrible indictment of the general practitioner, suggesting gross ignorance and negligence, and urgently calling for radical reform in obstetric methods usually practiced. The reasons for this state of affairs are many and various. Thus many of the older physicians only half accept, and do not follow, the teachings of the new school. In the education of students

opportunities for actual bedside demonstrations are comparatively rare, and hence the importance of strict asepsis in midwifery is not so fully impressed and emphasized as it is in surgery. Many excuse their shortcomings by pretending belief in the exploded doctrine of autoinfection, claiming that a parturient woman may infect herself, and that hence troublesome precautions are ineffectual and useless. Others, quoting the aphorism of the distinguished Dr. Blundel, that "meddlesome midwifery is bad," depend upon nature to bring their patients through. While some say that labor is a physiological process, and hence requires no special care or attention. Certain physicians claim to be aseptic, but forget that much depends on minute detail, and quiet their consciences by washing their hands in water containing a few drops of creolin or carbolic acid, leaving everything else to the nurse, and then glibly assert that every precaution has been observed.

The truth is the crude and imperfect methods commonly practiced are ridiculous imitations of real aseptic midwifery, and no accoucheur can do safe and thorough work who practices in this way and has not trained himself to manage every labor case according to strict surgical principles.

DIAGNOSIS.

To the obstetric surgeon accurate diagnosis is very essential, for upon it is based the whole matter of election in operative procedures. The physical examination which should be made of every pregnant woman long before the beginning of labor furnishes him information that is invaluable. By it it is possible to decide as to the necessity for interference and to select that method of delivery which best subserves the interest of both mother and child. This examination prevents such mistakes as that of attempting delivery by forceps in cases suited only for version, or

craniotomy where symphyseotomy or some other operation would better meet the indications. The obstetrician is thus also saved the embarrassment of having to face complications for which he is unprepared, or abnormal conditions which it is too late to remedy. Without this previous knowledge, he is often obliged to do for his patients not that which is best, but that which is most available.

The improved means of diagnosis now at our disposal make it possible to accurately determine the capacity of the pelvic canal and its relation to the fetus which has to pass through it. This gives exactness to treatment and removes the operations of obstetric surgery from the category of emergency operations, in which until recently they were classed, and makes them elective operations, thus very much enhancing the chances of success.

The preliminary examination, in order to be of value, must be conducted in a systematic manner and should include auscultation, palpation, and pelvimetry. Every organ of the body should be investigated and a careful chemical and microscopical study of the urine made.

The following case record is given as a convenient form for cases in private practice, as it is not so complicated as the forms generally used in lying-in hospitals.

CASE RECORD

OF THE

OBSTETRICAL SERVICE

OF THE

City and Lamar Hospitals and Policlinic,

AUGUSTA, GA.

No. OF ADMISSION..... ..... No. OF BIRTH..... ....

NAME .....Age.....Nationality.....Occupation.....Single Married

Day and Hour of Admission ....189 .....at..... .....A. M. P. M. .....*gravida*

PERSONAL HISTORY

DISEASES: (Before Puberty / After Puberty / Present)

First Menstruation, Age..... Duration.....Amount .....Pain.....

Subsequent Menstruation, Type .....weekly. Duration ..... Amount.....Pain.....

Last Menstruation (doubtful) (sure) (first day of) .....189 .....Duration..... Amount .....Quickening .....

Present Pregnancy.....

Previous Pregnancies (miscarriages?).....

Previous Labors..... Children... (alive / dead)

Previous Childbeds .....

FAMILY HISTORY .....

EXAMINATION ON ADMISSION (in .....Stage of Labor / before labor)

INSPECTION AND PALPATION

Breasts (Small) (Medium) (Large) — Form ....Gland tissue..... .....Nipples.....

Areola .....Striæ ..... Colostrum.....

Abdomen. Form .....Medium Line.....Striæ (new / old)

Abdominal Wall.....Naval.....

Genitals .....Perineum.....

Lower Limbs.....

Presentation .....*Position* .....

AUSCULTATION

Fœtal Heart .....Frequency .....Loud Faint

Uterine Souffle .....Umbilical Souffle.....

VAGINAL EXAMINATION

Vagina .....

Cervix .....

Os Externum.....Os Internum .....

MENSURATION

Distance Between Spinæ.....Between Cristæ.....Right Oblique .....Left Oblique. .....

Conjugata Externa .....Conj. Diagonalis .....Conj. Vera.....

URANALYSIS

Specific Gravity .....Reaction.....Albumen.....

Microscopic Ex.....Urea.....

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LABOR

I Stage Began at.....A.M. / P.M. (artificially)

Membranes Ruptured (spontaneously) at .....A.M. / P.M.

II Stage Began at.....A.M. / P.M.

BIRTH at.....A.M. / P.M.....189....

Placenta Expressed (spontan.) at .....A.M. / P.M. (Crede)

Pains I Stage .....

Pains II Stage .....

Mechanism .....Attitude. .....Posture for Delivery.....

General Condition of Mother during Labor .....Fœtal Heart.....

Medication during Labor.....

Duration of I Stage.....H.....M

Duration of II Stage .....H.....M

Dur. of I and II Stage .....H.....M

Duration of III Stage.....H.....M

Duration of the Labor .....H.....M

Chloroform (obstetic degree) (Surgical degree)

Given from..... to ..... (continuously)

Total .Mm. (discontin.)

By .....

AFTER LABOR.

General Condition of Mother Immediately after End of III Stage .....Temp.....Pulse.....Resp .....

Condition one hour after.....Temp.....Pulse.....Resp .....

Uterine Douche.....Vaginal Douche.....Perineum .....Torn. Sutures (kind and number).....

CHILD

Sex .....Temp.....Weight .....16. Length.....

DIAMETERS:
- Occipito Frontal .....
- Biparietal .....
- Occipit-Mental. .....
- Sub-Occip. Breg .....
- Sub-Occip. Fron .....
- Bisacromial.....

CIRCUMFERENCES:
- Occipito Frontal .....
- Sub Occip.-Fron. .....
- Bisacromial .....
- Length .....

Caput Succedaneum.....

Primary Respirations (artificial / spontaneous (immediate) (delayed))

Treatment of Asphyxia (slight / moderate / deep)

Examined Per Vag. by

Delivered by .....

CORD

Insertion .....

Spirals to ..... (from child)

Around Neck ..... (tight / loose)

Treatment .....

Anomalies .....

MEMBRANES.

Complete Incomplete

Rupture.....

HEMORRHAGE

Estimated.....

Weighed.....

Total. .....

Indications for Interference

PLACENTA

Weight (in ounces) .....

Size .....

Shape .....

Condition .....

Anomalies.....

DIAGNOSIS (of position) .....

OPERATIONS

1.....

2.....

3 .....

This examination should be made at the end of the seventh and eighth months. The urine should be analyzed every two weeks during the last three months of pregnancy.

For obstetric purposes the phoneidoscope is certainly a great improvement over other means of auscultation, as it enables us to hear readily the uterine and funic murmurs, and the fetal heart sounds in early pregnancy, or in cases of occipito-posterior positions of the vertex.

Collyer's pelvimeter is the one best adapted for ordinary use, as it is perfectly accurate and convenient to handle.

The important pelvic measurements are the anterior interspinous, the intercristal, and the external and diagonal conjugate diameters. These diameters may be measured without the slightest exposure or discomfort to the patient, and furnish most important data; thus in cases where the antero-posterior diameter of the superior strait is between three and four inches, version or the forceps is indicated; in those in which it is between two and three inches, symphyseotomy or embryotomy is required; while a measurement of an inch and a half imperatively demands the performance of Cæsarean section. The question of the advisability of inducing premature labor in cases of pelvic distortion can alone be settled by pelvimetry.

TECHNIQUE.

In obstetric surgery the fate of the patient is absolutely dependent upon the technique of the medical attendant. It is very hard to make the genital tract thoroughly aseptic, but this condition may be secured and the same results in private as in hospital practice attained if physicians will only follow some definite method. What is required is a method that is effective and at the same time susceptible of quick and easy execution.

The three essential elements which enter into the aseptic

technique of the most trivial as well as the most difficult operations are: 1st. A clean field of operation; the patient must be properly prepared. 2d. A clean environment; the nurse, the bed, the clothing, etc., must be perfectly aseptic. 3d. A clean operator; his hands and instruments must be aseptic. It is only by close attention to these things that security from septic infection is made positively certain.

THE OBSTETRICIAN.

The obstetrician who, with the present lights before him, would introduce a dirty finger into the vagina of a parturient woman should be prosecuted for assault with intent to murder. Furbringer's is among the best of the many methods for making the hands aseptic, and is well suited to obstetric practice, because it is the simplest. It consists: 1st. In thoroughly cleaning the nails with a metallic nail scraper. 2d. Scrubbing the hands for at least three minutes with tincture of green soap and hot boiled water, using a nail brush for this purpose that has been previously boiled. Special care should be devoted to the nails and finger tips, and the water should be changed two or three times during the process. 3d. Rinsing the hands in 95 per cent. alcohol. 4th. Soaking in 1 to 1000 bichloride solution for one minute. No towels are used. The thorough scrubbing of the surface of the skin with soap and water is the most important step in the cleansing process, as in this way the bacteria-laden dirt and epidermis is best removed. The chemical antiseptics play but a secondary part, and the one used may be a matter of individual choice, or they may be omitted altogether if the scrubbing is done properly. The brushes used require the most scrupulous care or they will become the carriers of contagion, for it is evident that if not repeatedly disinfected they soon become perfect culture fields for every variety of microbe.

The cheap hand brushes made of wood and pigs bristles are easily sterilized by boiling, and are kept aseptic by immersion in 1 to 1000 bichloride solution. Every obstetric surgeon should carry in his satchel an air tight jar containing one or more of these brushes thus prepared. These brushes should be boiled after each operation and the bichloride solution made fresh.

The obstetrician should wear while operating a rubber apron to protect his clothes, and over this a freshly laundered and baked sleeveless gown to keep his hands clean.

THE STERILIZATION OF INSTRUMENTS.

Metal instruments, silk or silkworm-gut sutures, glass douche tubes, etc., are best sterilized by boiling in 1 to 5 per cent. carb. soda solution for half an hour. This sterilization should be done at the house of the patient in order to be perfect. Needles are made aseptic by immersing in crude carbolic acid, and should be kept in sterilized oil. Catgut sutures had better never be employed.

THE PREPARATION OF THE PATIENT.

In natural labor the only preparation of the patient necessary is a full bath of soap and warm water and an additional scrubbing of the external genitals, thighs and abdomen with tinct. of green soap and boiled hot water. The use of alcohol and bichloride solution may be dispensed with. The use of vaginal douches before or after delivery in such cases is not necessary, as bacteriological investigation has shown that the micro-organisms found in the vagina under normal conditions are innocuous. Antiseptics, particularly bichloride, irritate the mucous membrane, remove the lubricant secretions and interfere greatly with the process of dilatation. In operative cases, especially in consultation practice, where the woman has been handled by a number of persons, every precaution of aseptic technique should be fully carried out. The complete cleansing

of the vagina is a very difficult matter. This canal should be first douched with a sterile normal salt solution, and then scrubbed with tincture of green soap by means of pledgets of iodoform gauze held in long dressing forceps, the walls being widely separated by Sims's speculum or the fingers, after which another douche of normal salt or creolin solution should be given. Bichloride should never be used in the birth-canal for the reason that, as Steffeck has shown, it has no effect, even in 1 to 1000 solution, upon the bacteria present. It forms an insoluble albuminate with the secretions and damages the epithelium so as to greatly decrease its resisting power, and thus it increases rather than diminishes the danger of infection. Futhermore, intense poisoning has followed its use. When an antiseptic is indicated in the vagina or uterus creolin is the agent to be preferred, because it is unirritating, non-toxic, and just as effective as any of the others.

LUBRICANTS.

The vaseline jar of the general practitioner is often to the lying-in woman a veritable Pandora's box, out of which come a variety of ills. In normal cases of labor, lubricants are never necessary, and the sooner they are abandoned the better. Lard should never under any circumstances be employed. If a lubricant is used, it should be perfectly sterile material, such as boiled sweet oil, or a five per cent. creolin solution in boiled water.

THE NURSE.

As the success of an operation largely rests upon the preparation and after care of the patient, no obstetrician who has his own reputation and the interest of his patient at heart will consent to treat a case unless he has the selection of the nurse. She should be intelligent, conscientious, and thoroughly reliable and be fully alive to the importance of asepsis in every detail, and well trained

in carrying it out. Unless she is all this the most skillful operation and the most elaborate technique will prove an utter failure. Every aseptic precaution observed by the obstetrician applies with even greater force to the nurse, for she comes in more frequent contact with the woman, and if she touches her with unclean hands she is just as apt to infect. The nurse should see that the environment of the lying-in woman is clean: that is, that the bed, the dressings, the guards, bandages, wash-cloths, and utensils are aseptic. The clothing of the lying-in woman should be freshly laundered, and during operations the field of operation should be surrounded by sterilized towels and fully exposed to view. The bed should be prepared with sheets just from the wash. Dressings are prepared by steaming in an Arnold sterilizer or baking in a common oven. The guards for the vulva are made by cutting a piece of cotton batting twelve inches long, four wide and half an inch thick and folding it in a piece of cheese cloth of a little larger size. These are rendered aseptic by baking for half an hour in an oven or steaming for the same length of time in a sterilizer. The vulva pads should be changed frequently and always burned after removal. Cheese cloth is a valuable material for use in the lying-in room, as it is cheap and easily rendered aseptic by boiling in soda solution. Those physicians who aspire to be specialists in obstetric surgery should keep their dressings and instruments packed in some portable sterilizer always ready for immediate use. Booth's sterilizer is very convenient for this purpose.

Precision in diagnosis and asepsis in technique is the key-note of the great advance that obstetric art has made during the last quarter of a century, and the obstetrician, in order to measure fully up to the responsibilities that now devolve upon him, must ever remember that the price of safety is eternal vigilance."

THE INDUCTION OF PREMATURE LABOR IN THE INTEREST OF MOTHER AND CHILD.

By EUGENE R. CORSON, B.S., M.D., Savannah, Ga.

The two following cases seem to be of sufficient interest and significance to suggest some thoughts on the above subject.

Mrs. N., aged twenty-two, primipara, about eight months gone, sent for me on account of dimness of vision and violent facial neuralgia; she could not recognize her husband across the room; the urine had a sp. gr. of 1010 and showed by volume 25 per cent. albumin; there was some anasarca. She was at once put to bed, on a milk diet exclusively, and free catharsis by salts. By the end of three days the general swelling was relieved, but the eye symptoms and the neuralgia continued; vision had become so bad that she could not recognize any one at the foot of the bed; the fetal heart sounds were strong and regular, and the position of the child was O. D. Ant.

Under strict antisepsis, a large flexible bougie was introduced into the uterus. Labor began in twenty-four hours, and in eight hours the patient was delivered of a healthy female child, apparently a little over eight months. The labor was in every way normal and the convalescence uneventful. The child is now six months old and has not had a day's illness. The mother's urine still contains a trace of albumin; the eye symptoms were gone by the end of the second week; otherwise she seems to be in perfect health.

The second case is an entirely different one. On Sep-

tember 1, 1895, I was called to deliver Mrs. C., aged twenty-five, primipara, short and stout, though with every appearance of health. The position of the child was O. L. Ant. I had previously examined her pelvis, and found the following external measurements:

Conjugate diameter ..... 7 inches
Interspinous diameter ..... 9 inches
Intercristal diameter .....10 inches
Intertrochanteric diameter .....11¾ inches

The pains started at 8 p.m., and became rapidly very severe, the cervix dilating well and the head coming down to a certain point where it suddenly stopped. The pains continued severe and frequent up to 3:30 a.m., when they became less and almost stopped, the head of course making no further progress. At 4:40 a.m., I gave chloroform and easily applied the forceps. I found the head very tight, however, and only after great efforts for twenty minutes brought it down to the perineum. I pressed out the head without any perineal tear. The child was dead. I made the following measurements of the child's head:

Occipito-frontal circumference....16½ inches.
Caput succedaneum circumference, 12½ inches.

Mother had an afebrile convalescence. The child evidently died from cerebral compression.

Patient again pregnant the following year.

On December 21, 1896, I brought on labor about three weeks before the completion of the ninth month, by inserting a flexible bougie between the membranes and the uterine wall. The fetal hearts sounds were very strong; child in the first position. Inserted the bougie at 11 a.m.; labor began at 12 m. the day following; expulsive pains began at 5 p.m.; head born at 6:30 p.m.; placenta delivered at 6:38; child a vigorous male, about three weeks premature.

weighing six pounds. The diameters of the child's head were:

Bitemporal	$2\frac{1}{2}$ inches.
Biparietal	3 inches.
Occipito-mental	5 inches.
Occipito-bregmatic	$3\frac{1}{4}$ inches.
Occipito-frontal	4 inches.

Neither mother nor child have had an untoward symptom since delivery.

The first case clearly called for the induction of premature labor. The severe eye symptoms were quite enough to warrant interference, especially as the strong fetal heart and the other signs of advanced pregnancy pointed to an easily viable child. Where there is albuminuria alone, simpler methods must first be tried. Should, however, this albuminuria increase, as well as the anasarca and the cerebral symptoms, the induction of labor, after the assured vitality of the child, must be in every way in the interest of the mother and child.

The second case has a much wider bearing, involving, as it does, the question of more or less contraction of the pelvis, and offers much greater difficulties in the way of a proper solution of the problem and its efficient execution. Of the decided forms of contracted pelvis, I shall have nothing to say here. The entire question, with all the data, for example, as furnished by Ahlfeld, forms an important part of our text-books. It is of the minor forms of contraction as exemplified in our second case that I wish to say a few words.

It not infrequently happens that we deliver women under difficulties which the premature induction of labor two or three weeks before would have prevented, and with results incomparably better for both mother and child. I have, at present, for example, three such cases, which, in the event of pregnancy, I shall deliver two or three weeks

before the appointed time. With the present tendencies of our modern civilization ever towards a more highly differential brain and nervous system, such cases are more apt to increase rather than diminish. It means a larger fetal head at birth with no increase in pelvic capacity, so that this question of premature labor must become more and more a serious consideration. And with our advancing knowledge and improved methods, this operation becomes more and more a legitimate procedure. Nature herself has given us the hint in certain cases where premature labor occurs spontaneously and evidently in the interest of mother and child. The idea prevails generally among the laity that first labors are often slightly premature; I have never been able to satisfy myself on the subject. Certainly, if true, it is a strong argument in favor of the induction of premature labor. The thought often comes to me while attending the usually difficult first labor, what a blessing if we could accurately bring on labor just two weeks before the appointed time. It is only the difficulty of absolutely estimating the time of gestation which stands in the way. I should like to see every first child born two weeks premature, reserving the full nine months child for the second labor.

Nature has certainly given us the hint in that strange order of mammals, the marsupials, where the young are born prematurely and are afterwards cared for in the marsupium or pouch very much as we provide the couveuse or incubator for the premature infant.

The difficulties attending the induction of premature labor are very great. First and most important is the measurement of the pelvis, an exceedingly difficult thing to do to one's satisfaction. And even if accomplished, we still have to face our inability to estimate correctly the size of the fetal head. We have only averages to go by, and often in those very cases where definite knowledge is

necessary, the average fails us. Short, stout women approaching the dwarf type should always cause solicitude. External pelvic measurements a half inch below the average, especially in the conjugate diameter, should call for the most careful consideration. It is just here that skill and judgment are so in demand, and he who ascertains correctly the conditions and acts promptly and judiciously proves himself the right man.

It is with the primipara that the difficulty largely lies. The history of the first labor is always an immense help in the treatment of subsequent labors. In my second case, had I correctly estimated all the conditions of the first pregnancy, I might have saved the child by a premature labor of two or three weeks. It is the old story of "cab wit" over again. So, when the first labor gives evidence of a pelvis slightly under size, we have no excuse in failing to forestall trouble in future labors.

As to the best method of bringing on labor, the one method, to my mind, most suitable in the large majority of cases, is that known as Krause's, namely, the introduction of a solid flexible bougie between the membranes and the uterine wall. Under strict antisepsis it is without danger; it is painless, and it is sure, labor pains starting in about twenty-four hours. It has never failed me. I can imagine that in certain cases more heroic measures may be necessary, but the conditions must be rare.

Of course the most difficult part of the whole problem is the correct estimation of the time of gestation. Do what we may, we are liable to an error of two weeks. It is the careful weighing of all the data at our disposal which reduces this error to a minimum.

My second case illustrates the difficulty of relying upon dates:

308 days.

	Last sick,	Felt life,	Child born,	Predicted time,	Probable time of conception,
First pregnancy	Oct. 29th.	Feb. 22d.	Sept. 2d.	Aug. 5th.	Last week in Nov.

116 days. 192

263

	Last sick,	Felt life,	Child born,	Predicted time,
Second pregnancy	April 2d.	Aug. 17th.	Dec. 21st.	Jan'y 9th.

137 days. 126 days.

280 days.

In the first pregnancy conception evidently occurred just before the menstrual period in November, for there are 308 days between the first day of the last menstruation and confinement, there being thus a difference of 33 days between the estimated time and the real time. Had we attempted to use this record as a guide in the second pregnancy, we should have had May 1st as the most probable time of conception, and February 1st (276 days) as most probable time of confinement. Note the more liableness of the dates given for quickening. In the first pregnancy there are only 116 days between the dates of last sickness and quickening, but we know that conception could not have taken place much before the last week in November, leaving only about 84 days for the period of gestation when the patient felt life. In the second pregnancy quickening was first felt a good four months and a half after conception.

A careful study of the dates in the second pregnancy made delivery between two and three weeks premature, and I got as close to the real time as we can generally expect to do. My guides, however, were: The measurement of the height of the uterus, estimating the size of the child and the child's head by bimanual examination and the strength and distinctness of the fetal heart. These symptoms are all the more valuable when they tally with the dates given, as they did in this case.

My object in writing this paper has been attained if I have succeeded in calling the attention of the Association to the value of induced premature labor in certain cases of minor contraction, especially among primiparæ.

TREATMENT OF PLEURITIS.

By NEWT ANDERSON, M.D., Eudora, Ga.

Pluerisy is a disease of which the treatment becomes a matter of exceeding importance, for, as we have been told, while some cases are so mild that they go on to perfect recovery almost without medication, others are followed by suffering, deformity and death.

The object of treatment is to modify and change the difficult and dangerous cases that they shall give results more like the milder ones. Apart from the possibility of aborting the inflammatory process at the very onset of the invasion, there are several indications which demand the attentive consideration of the physician. The first of these is the physiological indication of rest. Strips of adhesive plaster two or three inches in breadth should be applied extending from the spine posteriorly to the sternum, anteriorly around the affected side, or an ordinary cotton bandage two and a half to four inches in width be applied tightly to the thorax. At first it is rather uncomfortable, but if removed by the solicitation of the patient he will soon beg to have it reapplied.

It is necessary, no matter how mild the case, to place the patient in bed, and a nutritious but plain diet should be given without stimulants. The sick room should be well ventilated. A saline purgative or compound cathartic pill, as best suits the requirements of each particular case, should be administered. To diminish the intensity of the pleural engorgement is of primary importance at this stage of the disease. To meet this indication was the object of the older

antiphlogistic method with its large bleedings and violent metocatharties and counter-irritants. While modern practice has totally discarded venesection, it has not been able to dispense altogether with the principle of local depletion, counter-irritation and derivative medication, and still tolerates it, though in an attenuated form. At present, local depletion, the blister and the lesser counter-irritants, the purgative diuretics and diaphoretics are the only relics that survive the general downfall of antiphlogism. While the blister has never had more enemies than in the present decade, its triumphant survival in the treatment of inflammatory affections of serous membrane, and in this one especially, is one of the best proofs of its utility.

I think the blister should be applied in the first stage. I do not think it will do any good after the membrane has been seriously altered and a thick coat of exudate has been spread over its external surface.

The blister should never remain longer than the time necessary to produce vesication.

The epidermis should not be removed, but should be simply punctured to allow the retained serum to escape. In children blisters should never be applied, as they will cause great pain, restlessness, and sometimes delirium, and for this reason gentler means should be resorted to for drawing the blood to the surface. Nothing is better for this purpose than a hot flaxseed poultice. In no case should cold be applied to the chest, as it will bring on violent fits of coughing, and thus increase the inflammatory action.

Hot applications are capable of doing much good.

In 1873, Austin Flint, Sr., in dealing with pleurisy, wrote: "A great change has taken place with respect to the use of opium in the treatment of acute inflammations. It was formerly used with much reserve under the apprehension that acting as a stimulant, its influence upon

the local disease must be unfavorable. Clinical experience, however, has led to the knowledge of its great value in all acute inflammations wherever situated."

The patient should be kept under its influence during the first week of the disease. The effect is the best criterion for its proper administration. Antipyrin, phenacetin, or salol should be administered to control fever.

We can minimize the use of opium to a great extent by using these drugs. Aconite or veratrum should never be administered, as they are too depressing on the circulation. By the use of phenacetin or antipyrin, the fever is promptly lowered, the pain abates, and the general condition of the patient is much improved. The profuse diaphoresis which follows the administration of these agents in febrile cases is of marked derivative benefit, and entirely supersedes the older diaphoretics that were prescribed at this stage of the disease. One of the most valuable features presented by the therapeutic action of these agents lies in the fact that their effect is marked in proportion to the intensity of the acute process. The antipyretics alone are in many, if not the majority of cases, quite competent to meet the indications of the first stage entirely. While they cannot supersede opium altogether, their analgesic effect will permit us to greatly economize in the use of opium or morphine. In this manner the constipating effect of opium is much minimized, while its full benefits are obtained.

In a certain number of cases the disease stops short at the dry or plastic stage, and the patient is said to have had a dry pleurisy. This, however, though common enough in secondary or tubercular pleurisies, is rarely observed in cases which have presented any degree of the features of an acute illness characteristic of an attack of primary pleurisy. In the typical cases, the disease progresses rapidly to the stage of effusion. With the occurrence of the effu-

sion the pain becomes less, the breathing easier and less catching, though quicker than natural. As the effusion advances, the breathing becomes increasingly distressed until apnœa is threatened.

I think the less we meddle with the inflammatory fever while it is at its height, unless it becomes of itself a danger, the better. We must bear in mind that a certain amount of effusion is as much looked for in acute pleurisy as exudation in the air vesicles in pneumonia. We need not seriously consider how to promote the removal of the fluid in the first week or ten days, as in the majority of cases the fluid will gradually subside by spontaneous absorption. If resolution has not taken place within twenty or thirty days, the disease has ceased to be acute and becomes chronic, and hope for spontaneous absorption is abandoned.

As soon as the pain in the acute stage has subsided, the administration of opium should be discontinued, and such modification in the dietary, as well as treatment, should be prescribed as will better suit the changed pathological condition. Unless the quantity of fluid is increasing to alarming proportions, the patient should not be subjected to any serious annoyance on account of the serous effusion. The digestive and eliminative organs should not be too severely taxed by purgatives, diuretics or diaphoretics. During this period of rest immediately following the first week of the attack, plain but nutritious diet should be given. In the way of medical agents, Clemant, of Lyons, states "that he at once administers antipyrin, whether fever be present or not, with no other medication. In all cases there was on the following day, or, at latest, the day after, a marked reduction in the height to which the dullness reached. The dose given was 15 grains every four hours, until six doses were given. This is, however, more efficacious in the truly rheumatic cases." If the effusion still lingers or in-

creases, an exclusive milk diet should be given. It causes a notable increase in the amount of urine excreted. It should be taken in mouthfuls every hour, or from three to six pints in the twenty-four hours.

M. Eloy states that in some cases with the milk treatment, the urethra may take place of the trocar. A concentrated watery solution of Epsom salts should be administered early in the morning. Bitartrated potassium, compound jalap powder, or other equally vigorous purgatives may be selected, though none of them can be relied upon so much as the concentrated Epsom salts solution first mentioned.

Water in any case should be given sparingly and preferably in the shape of milk. In the way of securing elimination by diuretics, the means at hand are very unsatisfactory, and I think it is unnecessary to disturb the stomach by administering it. After reaching the fourth week and the effusion still resists the remedies, the only procedure is to evacuate the effusion by aspiration.

MORPHINE AND ITS EFFECTS.

By A. K. BELL, M.D., Madison, Ga.

Mr. President and Gentlemen: Opium, the subject for consideration, is perhaps the oldest drug of the materia medica, having been used by the savage and the civilized, the ancients as well as the moderns, and no doubt long before the dawn of authentic history. Though the drug itself may not be new, the conception of some of its effects may be. As I regard opium and its derivatives, it is at present the only panacea known to man. As a reliable anodyne, it is the only one and the safest one we have at our command. I unhesitatingly take the position, that opium is the anodyne to use in allaying pain, because it does so promptly and effectively, and with less injurious effect to the vital forces than any other drug of this class. Its paralyzing effect upon the sensory nerve element is at less expense to the system than that of any other drug that claims to relieve pain; such, for instance, as antikamnia, phenacetin, febrinol, etc.

While opium is paralyzing or benumbing the sensory nerves, it is stimulating and invigorating the motor nerves, thus doing double work, and producing a most happy combination of effects; on the one hand relieving pain, and on the other hand giving strength and tone.

In the administration of morphine, or an opiate of any kind, it should always be taken into consideration that the dose to be given is to be increased in proportion to the intensity of the pain. As, for example, the dose should be twice as large to relieve the pain from the passage of a renal calculus as for ordinary neuralgic pain.

It is often seen in practice that patients cannot take morphine without the effects of nausea and vomiting, and a mental excitement that frequently prevents sleep. This is too generally and universally known for me to make any suggestions. But many of these patients may take morphine when combined with atropia, when it cannot be taken alone. And here I wish to say that the dose of 1-150 of a grain of atropia, as generally given, is too much; 1-200 of a grain is much better. Another combination in such cases consists of small doses of salicylic acid and bicarbonate of soda combined with morphine. This frequently obviates the nausea, lessens the stage of excitement, producing a most happy, tranquilizing effect; at the same time relieving the pain and resulting in sleep.

To produce a hypnotic influence by the use of morphine, it must be remembered that its first and direct influence is not to produce sleep. Morphia is named from the god of dreams, Morpheus, and does not necessarily mean sleep. When pain is relieved by its use and the patient finally goes into a sleep, it is because the nervous strain caused by the pain has been relieved, and tired nature, from fatigue and exhaustion, goes into a natural repose and is attempting to reproduce the waste that the disease and distress have caused her to consume in her efforts to overcome the pain. In the administration of morphine to cause sleep, it should be given from four to six hours previous to the time that sleep is desired to be produced. Then the state of excitement will have passed off, and nature, trying to restore her equilibrium, goes into a state of sleep.

The dose of morphine should be regulated according to the intensity of the pain, as has been said above. It should be just exactly sufficient to relieve the pain, and no more; for every particle that is taken more than that dose will act as a poison, and produce the unpleasant after-effects, such as nausea and prostration. Of course this precise dose cannot

always be ascertained at first with every patient, for we do not know their susceptibility to the drug. But after having administered it a few times, it should be learned and so regulated. In giving morphine to relieve pain, I claim that it does less injury to the economy than any other drug given for the same purpose. The system keeps its strength under its influence longer; it retards waste; tissue combustion is lessened, and thus the patient loses less by taking the drug than he would by being allowed to go unrelieved and left to the unaided powers of nature. Just here I will cite a case: Patient a stout, robust man; he began the use of morphine hypodermically to relieve pain, taking it over 400 times in three months. After he had taken it repeatedly for one month, I observed him very closely and noted the results. After one dose had spent its action, he would become very weak in his sensory nervous system, easily excited, restless, and in a general state of hyperesthesia. A careful examination of his heart and pulse showed no sign of weakening whatever; the heart did not show any symptoms of giving way, as would have been expected. Another case I wish to speak of is a young man, aged thirty-two; had been taking morphine hypodermically for about ten years; in the beginning for rheumatism; now stout, strong and robust. On this special occasion he took about two grains before retiring, between three and four o'clock in the morning, having been up all night. About half an hour after retiring, he was struck on the side of the head while asleep by an assassin, with a wagon-standard of seasoned dogwood, three feet long, two inches in diameter. The left parietal bone was fractured, producing internal cranial hemorrhage, rendering him unconscious at once. I saw him twelve hours after the assault. He was still unconscious and very restless. His pulse was full and strong; breathing stertorous. He had been fourteen hours without morphine or opiate of any kind. Knowing

his previous history, I gave one grain of the drug at once to allay the nervousness, which had the desired effect. The skull was trephined, clots of blood were removed from off the brain, and then there was a slight improvement in his condition. He lay unconscious for fifteen days, and was given morphine at intervals of eight to ten hours. The dose was gradually reduced to one-quarter of a grain a day, although he had been taking eight to ten grains a day. This reduction in the dose did not have any effect towards weakening his heart whatever. He regained consciousness fifteen days from date of injury, and made a good recovery, and now, seven years later, he still lives, hale and strong, and continues to take morphine.

The third state of the effect of morphine is one of prostration and exhaustion of the sensory nervous system. Why opium is so exciting and stimulating to the nervous system is not clearly understood, but I think it more than probable that it is because the primary effect of the drug is to dilate the capillary vessels, causing a more diffuse rush of blood to all parts of the body, giving rise to its more thorough oxygenation, and thereby rendering it more vivifying and of far greater force to nerve centers. After the effects of the morphine have died out, a contraction of the blood-vessels takes place, the supply of oxygen is lessened, and the withdrawal of this unnatural stimulant will produce a lowering of the vital forces below the normal condition. Nausea and vomiting, which is a common symptom in the third stage, may go on to an alarming extent, to counteract which I will name some remedies that have acted well with me: atropia and strychnine (these given hypodermically), and bromidia, which may be used by enema, if vomiting is excessive.

Now I do not wish to be understood as an advocate of the morphine habit; far from it. But many doctors have said to me, "I do not like to give morphine; it will get my patients in the habit." I wish to say that in an active prac-

tice of thirteen years, with a free use of the drug, I have never made a morphine-eater. But I will say in some cases I would advise the use of the drug continually, because it prolongs life, lessens tissue waste, retards the activity of the cells, and sustains the vital forces,especially the heart; producing a contented and tranquilizing effect upon the mind, more satisfactory than any other drug. Morphine and alcohol do not go harmoniously together. I mean alcohol will not be tolerated by the system with morphine continually for a very long period of time. Morphine, checking the secretions of the system, making the system less active, prevents, or at least retards, the elimination of the alcohol, and by keeping it stored up in the system, it does not take it long, directly or indirectly, to produce a poison sufficient to destroy life.

A few cases I have gathered together will illustrate my position as to opium's prolonging life:

Mrs. H. became an invalid at the age of 25; began taking morphine continuously; grew active and strong, and attended to household duties and took morphine for thirty years.

Mr. F. was stricken with a partial paralysis; began taking morphine to relieve pain; grew active and strong (but did not cure paralysis), and continued the use of the drug for twenty years.

Mrs. C. always appeared delicate; began the use of opium; was able to attend to household duties, and continued the use of the drug for twenty-five years.

Mrs. H., very active, stout and robust; began taking morphine twenty years ago, and is now apparently enjoying the blessing of perfect health.

Mrs. C. always appeared delicate; took opium for twenty-five years; attended to household duties; active and possessed clear mental faculties during life.

Mrs. H., stout and robust and very active; has taken

morphine for twenty years; a woman of unusual business capacity and a successful financier.

Mr. H. was stricken with paralysis; took morphine for twenty years, and attended to a mercantile business successfully.

The profession, I am sure, is aware that morphine is now being used to an alarming extent by the masses, and that this use is growing daily. Numerous institutions exist for the treatment of the morphine-eater; and physicians everywhere have come to regard the habit as a disease, to be combated as any other. It becomes imperative upon us, therefore, to take steps toward stopping the promiscuous sale of the drug. The problem that confronts us is, "How can this be done?"

MORPHINE HABITUÉS WHO DRANK WHISKEY.

F. took morphine 4 to 5 years; active. Dead.
O. took morphine 3 to 4 years; active. Dead.
G. took morphine 3 years; active. Dead.
K. took morphine 10 years; invalid. Dead.
G. took morphine 12 years; active. Dead.
T. took morphine 1 year; active. Dead.
B. took morphine 1 year; invalid. Dead.

MORPHINE HABITUÉS WHO DID NOT DRINK WHISKEY.

Mrs. H. took morphine 30 years; active and strong. Dead.

Mrs. H. took morphine 25 years; active and strong. Living.

Mrs. C. took morphine 35 years; delicate. Dead.

Mr. F. took morphine 20 years hypodermically; active. Dead.

Mrs. B. took opium 30 years; strong and active. Dead.

Mrs. H. took morphine 15 years; strong and active. Living.

Mr. C. took morphine 12 years; strong and active. Living.

Miss H. took morphine 10 years; strong and active. Living.

ATROPIA POISONING.

By A. K. BELL, Madison, Ga.

I also have a case of accidental poisoning by atropia, which I would like to report:

Mrs. T., aged twenty-five, delicate constitution, highly educated. Drug clerk made mistake and filled prescription with 1-6 grain sulp. atropia; dose was taken at 7 p.m.; in fifteen minutes began feeling queer and dizzy; constriction in throat and fauces; she was conscious that the medicine was wrong and tried to vomit, but could not. Becoming alarmed, she sent at once for me; in the meantime, with wonderful fortitude, she kept moving about all the time, feeling that if she were to be still her senses would be overcome and she would become unconscious. At 8:30 I saw her, she was very much excited and feared that she would soon die. I found pulse about 180, thready and feeble, face pale, pupils dilated to their utmost, very excited and talkative; respiration hurried and shallow. I tried to produce vomiting but could not; realizing I had only a short time to work in, I at once gave two ounces of cognac brandy, followed in five minutes by 1-4 grain of morphine hypodermically; in five minutes more she became unconscious with low muttering delirium, sense of hearing paralyzed, could not swallow, eyes wide open and no response to strong light whatever; after remaining quiet for four hours, she became violent; morphine 1-4 grain was administered again, which had the desired effect of quieting her; surface was cold and moist; she was wrapped in blankets and hot bottles were used. The capillary vessels

filled again, warmth and color returned, pulse improved; she lay unconscious for twelve hours and then regained consciousness. The after-effects were prostration of respiratory muscle and heart; was confined to her bed for two months, but made recovery to normal condition.

KERATITIS PARENCHYMATOSA: A REVIEW OF SEVEN CASES.

By T. E MITCHELL, M D, Columbus, Ga.

As an introductory to what we are about to say a brief reference to the anatomy of the cornea may not be out of place. The cornea, together with the sclera, forms the outer tunic or envelope of the eyeball. It is perfectly transparent, and is composed of a fibrous, tough, unyielding and inelastic substance identical in structure with that of the sclera with which it is continuous. The average thickness of both the cornea and the sclera is about one millimeter. The cornea forms the anterior segment of the globe and is equal to one-sixth of the whole. Its radius of curvature is eight millimeters while that of the sclera is twelve. The cornea and sclera being segments of different spheres the former fits into the latter not unlike a watch crystal fits in its case. From without inward the cornea may be studied as consisting of three layers: first, the conjunctival or epithelial; second, the scleral; and third, the uveal layer. The epithelial layer is a continuation of the conjunctival epithelium upon the cornea and is exceedingly thin and quite transparent. The scleral layer or substantia propria of the cornea includes the anterior basal (Bowman's) membrane and the corneal tissue proper. Its thickness is equal to ninety-five per cent. of the entire cornea. The true corneal tissue is composed ultimately of delicate fibrillæ of connective tissue; these are united into bundles and these in turn are arranged into lamellæ fifty to sixty in number. The fibrillæ, bundles and lamellæ are joined together by a

cement-like substance in which are left numerous corneal spaces or lacunæ intercommunicating by narrow canals. These lacunæ, with their canals, form the lymph system of the cornea through which circulates its nutrient material. The lacunæ contain also the fixed corneal corpuscles. The eveal layer includes the posterior elastic (Descemet's) membrane together with its endothelium.

The cornea is abundantly supplied with the ciliary nerves through the nasal branch of the ophthalmic division of the fifth cranial nerve. In order to maintain the perfect transparency of the cornea its nerve supply is of the non-medullated variety.

The cornea is a non-vascular structure receiving its nutrient material in the form of blood-plasma from the anterior ciliary arteries where they form a network of marginal loops at the sclero-corneal junction. Inflammation of the cornea may be divided into—(A) keratitis suppurativa, and (B) keratitis non-suppurativa. Keratitis non-suppurativa may be further subdivided into—(*a*) the superficial forms and (*b*) the deep forms. Among the deep forms of keratitis non-suppurativa belongs the subject of this paper, keratitis parenchymatosa.

Parenchymatous keratitis, as its name implies, is a diffuse inflammation of the corneal tissue proper, and usually progresses until the inflammatory deposit gives to the entire cornea a milky or hazy appearance.

All cases do not run a prescribed course, nor present a typical picture, and yet in the vast majority of cases the course is sufficiently characteristic to enable it easily to be recognized.

Preceded by a few days of pericorneal injection, lachrymation and photophobia variable in intensity, spots of haziness appear at some part of the cornea. By focal illumination these are found to be situated in the deep tissues of the cornea rather than on either surface.

In a few weeks these points of inflammatory deposit have so far advanced and coalesced as that the entire cornea is uniformly cloudy, and its epithelial surface presents the so-called steamy or ground-glass appearance. When the inflammatory process has reached its acme a careful inspection by focal illumination will disclose blood-vessels extending from the sclera into the deep layers of the cornea, and because of their depth and the inflammatory deposit they present a dull salmon-colored red appearance. The opacity, which to the unaided eye appeared uniform, is found to have spots of different degrees of density.

Coincident with the conditions above described there is a variable amount of pain, quite a good deal of lachrymation and photophobia, and the iris is more or less involved; in some instances merely congested; in others positively inflamed with anterior synechia. More rarely the choroid, retina and ciliary body are involved.

Parenchymatous keratitis runs an eminently chronic course. The inflammatory symptoms gradually increase to from four to six weeks when the disease has reached its height. At this state the iris is, in many instances, scarcely recognizable through the opacity, and vision is reduced to coarse objects or the recognition between light and darkness.

The process of absorption and recovery now begins slowly but surely at the margin of the cornea and continues steadily until the entire deposit is quite completely removed and the vision restored approximately to its former degree of acuteness, the only permanent remains of the opacity being a fine diffuse cloudiness and a few minute blood-vessels visible only with the magnifying glass and causing but little or no impairment of sight. It takes from six to eighteen months for a case of interstitial keratitis to run its course, and, since the center of the cornea is the last point to regain its transparency, the vision is not restored till very

late in the disease. As a rule the more vascular the cornea and the more violent the circumcorneal congestion, the more rapidly does the deposit disappear.

Parenchymatous keratitis has for its etiological factor some constitutional dyscrasia, and inherited syphilis has been put down as the cause of sixty to seventy-five per cent. of all cases. In the vast majority of instances both eyes are involved, but one is usually attacked a few weeks, or even months, before the other. It generally occurs between the ages of five and twenty, rarely later than thirty. It is not difficult to make a diagnosis in fully developed cases if we bear in mind certain pathognomonic characteristics, namely: that the deposit is situated in the deep layers of the cornea; that the blood-vessels are in its substantia propria, and disappear abruptly at the sclero-corneal junction in contradistinction to superficial vessels that can be traced from the cornea into the conjunctiva; that mucous or muco-purulent secretion is never present; and that there is a total absence of any tendency to ulceration or abscess. In many cases, during the first few days of the disease, a diagnosis cannot be made with certainty, especially where the punctated spots of infiltration appear primarily near the margin. It is important (for the physician's reputation at least) that a diagnosis be made as early as possible, and the patient's mind impressed with the fact that the disease is always a chronic one; that he may not hope to recover sooner than from six to twelve months; that the fellow eye will probably become similarly involved and run a similar course, and that in nearly every instance the vision is restored to approximately its original degree of acuteness. The prognosis is therefore good as regards ultimate results, but unfavorable as to time, since from six months to two years are required for a case of interstitial keratitis to run its course.

Treatment is divided into local and constitutional, and

is directed to an amelioration of the local symptoms, the prevention of synechia, and the removal of the inflammatory deposit in the corneal tissue.

Locally, then, we use atropia, antiseptic lotions and hot fomentations, and when the eye tolerates it well, yellow-oxide-of-mercury ointment or calomel dusted in the eye may hasten the process of repair.

Constitutionally, such remedies are indicated as will hasten absorption, and, since nearly all cases are due to syphilis, either acquired or inherited, there is a twofold reason for prescribing iodide of potash and mercury, the former in large doses (gr. 60 t. i. d.), the latter by inunction or in the form of the bichloride (gr. 1-24 t. i. d.). As adjuvants to this, iron, cod-liver oil, and generous tonics, when indicated.

Case 1.—Miss E. B., æt. twenty-six, came in March, 1894, with a deep-seated opacity in the pupilary area of the left eye. Had been two weeks in forming. Irritative symptoms very slight. The opacity increased very little in density or extent after I saw the patient. She was dismissed well in six months with vision equal $^{20}/_{xx}$ w + 50 sph ⌒ + 50 cyl ax at 120 degrees.

Case 2.—J. H., æt. twenty-three, came in July, 1894, with a slight infiltration near the lower margin of the cornea of right eye. There was quite a good deal of circumcorneal injection, pain, photophobia and lachrymation which persisted till the disease had run its course. In two weeks the entire cornea was hazy and studded with spots of dense opacity. Improvement began in four or five months and continued with a few intermissions till the end of the tenth month when the patient was dismissed well, with vision equal $^{20}/_{xx}$ w + 50 sph ⌒ + 50 cyl ax at 105 degrees.

Case 3.—Mrs. L. H., æt. twenty-four, came in February, 1895, with an opacity of the right cornea so dense that the iris could be seen only by focal illumination. This condition

had been about one month in developing. There was at no time any considerable amount of subjective symptoms, and the patient who was a seamstress continued her work. At the end of the second month many blood-vessels had formed in the deep layers of the cornea, and coincident with this vascularization the infiltration began rapidly to disappear. The patient was discharged well in five months from the beginning of the trouble with vision equal $^{20}/_{XX}$.

Case 4.—Miss S. S., æt. thirty-two, came in August, 1895, with a deep-seated infiltration of the left cornea. The opacity was central toward the nasal side and gradually faded into the transparent cornea. All the subjective symptoms were quite severe and persistent though the opacity did not increase in extent. No improvement was apparent for several months though she made a good recovery and was dismissed in ten months with vision under atropine equal $^{20}/_{XX}$ w $+$ 1.00 sph ⊃ $-$ .50 cyl ax at 45 degrees.

Case 5.—Master Frank T., æt. twelve, was brought in April, 1896, with punctated spots of inflammatory deposit over the entire cornea of the left eye, the intervening spaces being hazy. There was much circumcorneal congestion, photophobia, lachrymation and pain. The condition had been developing during several weeks. Two months after I saw the patient the opacity was very much less and the subjective symptoms had subsided. The right eye now became involved and ran a course similar to that of the left one. The patient was dismissed in nine months with normal vision in either eye.

Case 6.—Mary L., mulatto, æt. eighteen, came in May, 1896, with the entire cornea of the right eye densely opaque. It was with difficulty that the pupil could be seen even with focal illumination. There was considerable iritis and the pain, lachrymation, and photophobia were extreme. In three weeks the left eye was in a similar condition. The

patient was most comfortable with a thick protective bandage over both eyes. She had to be led from place to place. In six or eight weeks improvement began and progressed very rapidly until the subjective symptoms were quite all gone and only a milky film was left as a remains of the opacity. In this condition, six months after I first saw the patient, she passed from under my observation.

Case 7.—J. W. H., æt. twenty-four, came 15th of November, 1896, complaining of "weak eyes." A moderate amount of photophobia, pain, lachrymation and circumcorneal injection had been developing during two or three weeks. Gave a specific history dating back three years. In another ten days there was a double iritis and deep-seated spots of infiltration in both corneæ. In a short while the iritis subsided and soon thereafter the corneal opacity began to disappear. The acme of the disease was reached sooner in the right eye than in the left. Five months after the first symptoms, the right eye is normal in appearance and only a milky film of the opacity remains. This is the only one of the seven cases reported that has an acquired specific history.

[NOTE.—Case 7 was dismissed well, May 15, 1897, with vision under atropine equal $\frac{20}{xx}$ in the right eye and $\frac{20}{xxx}$ in the left eye, with -2.00 sph $\bar{}$ $+75$ cyl ax at 90 degrees in front of either eye.]

REPORT OF CASE OF EXTRA-UTERINE PREGNANCY.

By JOHN R. SHANNON, A.B., M.D., Cabaniss, Ga.

I report this case because of the rarity of such cases and the peculiar conditions and the very happy results of the operation. I will give the history of the case as obtained from the woman and the midwife exactly as they reported it to me.

Susie —; aged twenty years; married at fifteen years of age; mother of four children, three dead and one living. The operation was in the spring of 1896. One year before the operation, she was taken with severe labor pains; the patient said it was her expected time. It was on Saturday night. The midwife remained with her until late the following Sunday night. A physician was called Sunday morning. The doctor did not think it was full time, but said it was about six or eight months advanced. Pains (the severe pains) ceased in a few days—the doctor having left and likewise the midwife—both despairing of the birth of child. Pains continued to come at intervals, though slight. In the course of a few days—about a week— another physician was called and poulticed the abdomen, and in a short while opened a supposed abscess and a small quantity of pus came from the place. In the course of several months, the opening healed only to break in another place in a few weeks. This place was only about one-fourth inch in diameter; and continued its discharge more or less all the time; though in very small quantities. She continued her household duties until about a month before the operation, when,

she becoming more weakened, a physician was called a few days before operation and I was called in consultation. We satisfied ourselves that it was a case of extra-uterine pregnancy and nothing but operation offered any hope to the life of the patient. We at once opened the abdominal cavity and found a nest of bones—a skeleton which I herewith exhibit to the association. The cavity was washed with hot water and peroxide hydrogen. Patient recovered nicely from the operation—fever never exceeded 101½ degrees Fah. No stitches were used. The cavity was packed with gauze, and in a few weeks the place had healed fairly well and the patient was going about the house. She is now perfectly healthy—menstruates regularly. She says she is as well as ever she was in her life—never has any post operation pains. This operation was done in a little cabin, and of course all the surroundings were not very favorable for such an operation.

DERMOID CYST OF BLADDER: REPORT OF CASE.

By WALTER A. CROWE, M.D.,
Professor of Obstetrics and Clinical Gynecology, Southern Medical College, Atlanta, Ga.

The so-called dermoid cyst is a tumor of the fibroid variety, and is found in almost every portion of the body. They contain the products of epithelial proliferation, hair, teeth, bone, etc.

Their origin is supposed to be due to a misplacement of the original germinal cells—the epiblast, hypoblast and mesoblast.

These tumors were first described by Lebert in 1852; he gave them the name "dermoid."

Olhousen, of Berlin, claims that from a collection of statistics of 3,275 ovariotomies, he found 3 per cent. of dermoids. These tumors of the ovaries usually remain dormant up to the time of puberty; then they begin to grow, due to the stimulation and activity of these organs during the menstrual period.

In 1874 Danzel and Martin reported the first description of open dermoids of the rectum and bladder. (Senn, Pathology and Treatment of Tumors.)

From the literature on the subject I find only a very few cases of dermoids of the bladder have been reported, so it is for the rare occurrence of these cases that I report this case with the following history:

L. M., negro, aged seventeen, well-developed, began to menstruate when twelve years old, periods regular, dysmen-

orrhea. I was called to see her in February, 1897, on account of the severe pain and soreness in the lower part of abdomen, which had almost disabled her from walking. She claims that this trouble began with her first period and has gradually grown worse. She was having an evening temperature varying from 99 to 101 degrees F., with an occasional chill or rigor.

On examination I found a mass on the right side filling the pelvis on that side and fixed. I also found what at that time seemed like a small pedunculated fibroid from the fundus of the uterus.

I opened the abdomen February 17. This tumor that I supposed was attached to the fundus of the uterus, was a dermoid cyst about an inch and a quarter in diameter and was attached to the bladder wall, with a rather thick pedicle. This I dissected off removing a portion of the muscular wall of the bladder. There was no connection between the interior of the bladder and this mass.

The other growth was a dermoid of the right ovary about the size of an orange, and firmly imbedded by inflammatory products. In removing this tumor I accidentally ruptured it, an accident that gave me a little trouble from infection, otherwise she made an uneventful recovery.

ACRANIAL MONSTER: SPECIMEN AND REPORT OF THE CASE.

By W. P. WILLIAMS, M.D, Blackshear, Ga.

The case and specimen which I present to the Association may be more readily understood by a brief clinical history. Mrs. H. R., multipara, aged twenty-three, had had two nor-

mal and uneventful pregnancies, giving birth to normal and well-developed children, one of which lives, a fine specimen of healthful and vigorous childhood. Her last menstruation occurred on March 27, 1896. About the last of April nausea and vomiting from her pregnancy set in, and continued with unusual severity for about three months. In

July she suffered a severe fright from a snake. On November 1st her home was burned at two o'clock in the morning, she being the first to discover the fire, which had gained such headway that the family barely escaped with their lives.

At four and a half months from date of last menstruation she detected the fetal movements, this occurring in first part of August. The movements continued lively until about Christmas and first of January, which should have been her normal term (about January 3d being the term from common methods of calculation.)

From this time fetal movements became less active until they almost ceased until the day before delivery, when they again became unusually lively. In December she experienced a very severe attack of dysentery lasting about two weeks, leaving her in a very debilitated state.

On the morning of March 10, 1897, labor came on, and when I arrived I found on examination a normal face presentation with chin well engaged under pubes. There was a remarkable absence of cranial firmness, which I attributed to the unusual presentation and lack of familiarity on my part with such presentations. While the pains were very short for this stage of labor they were rhythmical, and considering the advance apparently already made, it was unaccountable to me why delivery did not take place. The face had remained almost stationary so long under repeated pains that I finally decided in the interest of the features of the child, to use forceps. It was then that my astonishment reached its climax, for in passing my finger into the vagina to guide the blade of my instrument, I could find no head to guide it around, but massive shoulders seemed to fill every available space and block nature in her efforts at delivery. I grasped the headless face, and tried to bring the right shoulder down upon the perineum, but apparently with no success. In my extremity I sent for my friend,

Dr. Goethe, expecting the necessity of extracting body in sections; but happily for my own satisfaction and the preservation of my specimen, I succeeded in passing a twine in a catheter through the right axilla, and after drawing a strong tape through with it, succeeded in drawing the shoulder down, and with aid of my tape and right forefinger broke humerous and delivered right arm. The remainder was plain sailing, and I was happy in delivering the body without a single tear or bruise to the mother. The placenta was not of unusual size. The patient made a rapid and uneventful recovery without the establishment of active lactation.

I am sorry to weary you with the details of the case, but hope it may prove interesting in connection with the singular points presented for our consideration. The first thing is the brainless monster. How was it produced in a family where on both maternal and paternal sides there had never been a physical anomaly? Those who believe in maternal impression may find in the fright from the snake some resemblance between this monster and that symbol of subtlety and wisdom. And what is more apparent than what was suggested to me, that this mother, laboring under the terror of night, witnessing her home collapse in flame and smoke—what more natural than that she should transmit to her unborn child the wreck and ruin that she saw, and in the very citadel of this divine temple actually duplicate the sorrows and woe of that night? I shall leave this to those inclined to such things, with the suggestion that there is ample room for the imagination.

Possibly there may have been a connection between this anomaly and the poor health, with repeated shocks, which the mother suffered during her pregnancy.

But, leaving the arena of speculation and imagination to those interested in embryology and teratology, I turn to those especially instructive to the obstetrician. I re-

fer, in the first place, to the long period of gestation. I believe that while no one attempts to determine definitely the exact number of days in a normal pregnancy, all agree that they are about two hundred and eighty. But here is a case in which, beyond a doubt, gestation lasted for three hundred and forty-five days, or an excess over a normal period of sixty-five days. I am positive of this. The lady is a lady of intelligence, and she is most emphatic as to the period of last menstruation, her morning sickness, and the time of quickening. But this is not all. In the face of two normal pregnancies and normally developed children of a normal size, she gives birth to a headless monster of extraordinary size, weighing at least ten pounds and possibly twelve. Were there a cranium and contents of a proportionate size, this child must have weighed at least fourteen or fifteen pounds—double the size of her former children.

I believe it is an established principle that pelvic abnormalities, causing more or less obstruction to the outlet of the womb, may cause a prolongation of pregnancy; but this case demonstrated a normal pelvis by two normal births, and, with much difficulty, this large body

There are then these two facts that remain, to my mind at least, associated as cause and effect: the absent cranium and the long period of pregnancy; and we must conclude that the head and calcified cranium of the fetus is a decided factor in closing the term of a gravid uterus.

The factors which are generally accepted as entering into the precipitation of labor may be briefly summarized as follows: The tension to which the muscular fibers of the womb are subjected in the last months of pregnancy, and their reaction therefrom; the increased irritability of the gravid uterus at menstrual epochs; the progressive changes in tissue and the circulation of the blood about the attachment of the decidua, causing its easy response to an irritable womb in separating, and so acting as a foreign

body. But would these causes so combine if there were no firm cranium to respond to their call, and so increase irritability of the uterus by its hard and unresilient pressure upon its wall as to whip it into active and permanent contractions? My case would seem to answer, "No."

Furthermore, I find, on investigation, that as a rule these acranial monsters are of unusual size, and are spoken of as bodies of fine development. Is it not possible that, as a rule, these monsters, like this specimen, were over term, and attained their malignant growth by extended life *in utero?*

LA GRIPPE.

By W. C. LYLE, M.D., Augusta, Ga.

I realize that my paper would have been much more opportune could it have been presented some months ago, for at that time there seemed to be a general epidemic of this dread disease, of unusual severity and embracing almost every variety of symptoms.

However, I hope that this paper will at least evoke some interesting discussion relative to a disease which, in many respects, is still a somewhat mysterious one.

During the epidemic of 1890, when grippe attracted such universal attention in Europe, it was at first supposed to be some new disease, a product of our modern civilization, and it was so accepted and treated not only by the public and by the newspaper press; but by a small portion of the educated physicians.

When the epidemic shortly afterwards crossed to this continent, and attacked us in all its fury, it was regarded by many of the medical profession and almost all the laity as only a more fashionable name for a "bad cold."

Further research and more extended investigation, however, revealed the fact that this was merely the reappearance of a disease familiar to the world for ages, but which in its epidemic form has been so long dormant or absent from the western world, that its very existence had been forgotten, or it was looked upon as an extinct disease.

It may be of interest to introduce at this point a résumé of what students of medical history have resurrected from the past relative to the antiquity of grippe.

Those who have delved into the history of epidemics and epidemiology, recognize in grippe merely a recurrence of a disease which for centuries has periodically ravaged the whole civilized world.

These epidemics date from before the Christian Era, an attack having occurred in the Athenian army in Sicily 415 B. C.

After this they began to appear at irregular intervals, spreading over Europe generally in the direction of from east to west, of which no exact or complete records have been kept up to the year 1510, when it prevailed in the British Isles to quite an alarming extent, and quite an accurate account of the epidemic was written.

Hippocrates himself gives an account of an epidemic which ravaged Northern Greece in the fifth century before our era, a description of which he summed up as follows: "It was an infection frequently, in fact most often, ushered in by a kind of cough, intermittent at first, but recurring and accompanied in its recurrence by visual disturbances, sometimes with anginas and occasionally with paralysis of the limbs. Sometimes it followed a pre-existing fever, producing feebleness, pains, even abscesses of the limbs, etc.

Thus it will be seen that grippe possesses a very respectable antiquity. When we seek for predisposing influences there seem to be few.

People are attacked without regard to age, sex, occupation or social standing; the young and the old, the rich and the poor, male and female, the king upon his throne and beggar in his hovel.

Overcrowded, unhealthy, ill ventilated and damp dwellings render attacks more severe, but the dwellers are no more subject to them.

Previous or present illness is no protection and one attack renders no immunity to another.

Perhaps I should mention here, that according to ob-

servations made by Goldschmidt, of Madeira, in the presence of both diseases as epidemics, revaccination with vaccine virus protects not only against variola, but also against grippe.

This statement though, needs more complete verification. There seems, however, to be a predisposing influence in overwork, anxiety or care, and according to Dunglison in outbreaks of the disease in hospitals, the physicians and nurses were the first to be attacked.

In the South, at least, the seasons may be regarded as influencing the disease, for we seldom see a case or hear of an epidemic during the hot months, but relative altitude above the sea level seems not to influence it at all.

In one respect the etiology of the disease is settled beyond question, since the discovery by Pfeiffer, of Berlin, in 1892, of the bacillus of grippe, which, owing to the singular fact that only the ends of the bacillus stain, had before been mistaken for diplococci or streptococci. The origin of the bacillus, however, is by no means settled. Many authorities believe the cause to be in the air, and with good reason, as the crews of ships are attacked after they have been some weeks out, and with no communication from land.

Hermits are said to have been attacked in the woods or in the caves of their isolated homes. But evidence is accumulating to indicate that the disease is contagio-infectious rather than miasmatic-infectious, the bacillus coming from another person having the same disease.

The fact that it travels only as fast as people travel, and that it does this contrary to the direction of prevailing winds, are strong points in favor of this opinion.

The opposing fact that inoculations have thus far been unsuccessful in transmitting the disease is, however, against its contagious nature. It is difficult to fix the place

amongst the acute infections where grippe really belongs; whether it shall be considered a miasmatic or a contagious disease will depend altogether upon what is meant by these terms.

Advocates of miasm contend that the disease originates of itself in different places or that it is carried by the wind, and meet the objection that it is often carried against the wind, by the assumption that the currents at greater altitudes move in different directions.

It cannot be denied, however, that grippe shows itself first along the lines of river and rail, and that it appears first in towns about railroad stations, later in places more removed from the lines of travel.

There is no disease in which the characteristic symptoms vary as much in the various epidemics as they do in grippe, and there is also no other in which the symptoms vary so much in point of predilection and severity.

The predilection depends upon individual weakness and the susceptibility to disease of certain systems, as the nervous, respiratory, alimentary, and as Guiteras first mentions in a paper read before the Pan-American Medical Congress in 1893, relative to observations made while investigating the disease for the Health Department of the city of New York, and from which I quote freely, the genito-urinary.

The varieties of the attack during the different epidemics have given rise to numerous classifications, depending upon the different seats of the disturbance, such as cephalic, thoracic, abdominal, cerebral, bronchial, and typhoid.

The classification preferred at the present day seems to be that of the nervous, catharrhal, and gastric.

From personal observations I am inclined to the belief that there is only one type of grippe—catarrhal; and that all other varieties, such as gastric, musculo-neuralgic, respiratory, alimentary, etc., may be classified as either complications or sequelæ.

I classify thus, for the reason that I find catarrhal manifestations in all cases, and that all the other so-called varieties are different types of catarrhal or the result of a toxic effect produced in the following way:

The essential substance necessary to the life and propagation of the bacillus of grippe is the hemoglobin of the red blood corpuscle, which is the active oxygen-bearing constituent of the blood.

The hemoglobin thus removed, the blood is deprived of this active property, and throughout the whole human economy we have deficient oxidation and consequent deficient elimination, and toxic effects produced therefrom.

The genito-urinary form mentioned by Guiteras was first observed by his finding such an excess of organic material in the urine of insurance applicants, during and immediately following an epidemic of grippe.

My own investigations confirm this observation, but I find it is due simply to the deficient oxidation and consequent excess of waste products.

This over-production soon clogs the excretory organs, and the kidneys, especially, not only fail to respond to the increase of work demanded of them, but owing to the clogging of these organs by organic matter their functions are greatly impaired.

The consequent toxemia results, and we have with the catarrhal grippe causes for the almost numberless manifestations of this disease.

Can there be a truer picture of a combination of catarrhal inflammation and toxemia than in the acute symptoms of grippe—weakness, nausea, anorexia, languor, inability to do any mental or physical work, rheumatic pains variously distributed, urine high colored, foul tongue and breath, fever, great nervous prostration, restlessness, wakefulness, sweating, etc.?

Among the first, if not the first symptoms of grippe, are

some of the catarrhal manifestations, watery discharge from the nose, feeling of congestion over bridge of nose and of the eyes, pharyngitis, tonsillitis, and occasionally bronchitis, with resultant cough.

If the catarrhal inflammation extends to the alimentary tract we often have in addition to the loss of appetite and nausea, frequent and violent vomiting, with a diarrhea tenesmic in character.

The inflammation may involve the bladder, and be accompanied with constant desire to pass water, as in one case I saw in an elderly lady, a complete retention of urine, necessitating the constant use of the catheter until convalescence.

I have already mentioned as symptoms of grippe the catarrhal complications of conjunctivitis, pharyngitis, tonsillitis, etc.; in addition to those, we may have otitis, epistaxis, hemoptysis, meningitis, glandular enlargement, dysentery and other common symptoms, due to catarrhal inflammation.

The muscular and articular pains of grippe I consider as purely rheumatic, unless complicated with neuralgia, and both symptoms due to the same cause, deficient excretion.

The rheumatism is a result of retained uric acid products with a possible serous exudation into the joints and the sheaths of the muscles themselves.

This statement will probably require further confirmation, but the results of investigations and treatment have so far justified it.

The neuralgias, as well as many other neuroses, together with cardiac depression and certain symptoms of the typhoid complications, are all due to the toxic effect of the retained waste products. The peculiar susceptibility of grippe patients to lobar and lobular pneumonia may be accounted for in the same way.

There is often in the latter stages of grippe, an erythema, sometimes papular, sometimes marginate.

In a recent case, I saw quite a number of purpuric patches, with permanent discoloration. The occurrence of grippe in connection with obstetric cases, intensifies the pains of childbirth and prolongs the puerperal period.

The lochial discharge is much more profuse and of longer duration. The diagnosis of grippe is usually simple. It could only be confounded with coryza, tonsillitis, bronchitis, scarlatina, or dengue.

The three first named would be excluded by the absence of severe headaches, prostration, loss of appetite, etc. Scarlatina is excluded on account of lack of punctate character of eruption and the strawberry tongue.

Dengue can often be excluded by its appearance only in malarial districts. The prognosis is in most cases good. The disease, however, is grave when it occurs in the old and infirm, or where the patient suffers from Bright's disease or valvular disease of the heart.

An epidemic of grippe is always a serious thing, as it seems to bring out latent disease, and aggravates the progress of those in course and terminates many fatally.

The treatment may be summed up in few words. I use only two forms, eliminative and supportive. I am so firmly convinced that most of the painful symptoms, complications and sequelæ are due to defective elimination, that it is almost a routine treatment with me to use a diuretic together with some one of the salicylates.

Salol alone acts charmingly. The salicylate of cinchonidia is a favorite of mine, as the supportive principle counteracts the depression of the salicylic acid.

For the nervousness I often combine with salicylate of soda the bromide of soda; and where the nervous manifestations are decided I always use some form of coca or kola, with strychnia.

Stimulants are to be used when indictated.

During the attack all patients must be confined to their beds, and in convalescence should expose themselves very cautiously.

I have not, in this paper, entered into the minute study of grippe, as my main purpose was to emphasize my beliefs in regard to variety and the causation of some of the more prominent symptoms and complications, and I feel assured that if this paper causes sóme physician addicted to the antipyretic or other form of treatment to renounce it in favor of the one here advocated, it will have done much good.

THE GREAT PLAGUES OF HISTORY.

By M. F. CARSON, M D., Griffin, Ga.

At first view, it may appear a matter for wonder, that there should be so wide-spread an interest in everything pertaining to the origin and dissemination of disease throughout the race.

Daily observation, however, reveals the fact that such interest is in reality well-nigh universal. Nothing, perhaps, so quickly engages the attention of the public as the account of some new disease, or the discovery of a new remedy vaunted as a panacea for human ailment, or the history of some great epidemic which has decimated—time and again—the populations of the nations of the past. We do not need to seek far, in order to discover the true causes of this anxious attitude of the public mind. It is at once obvious, that the universal law of death must ever lend a somber interest to all infirmities of the human organism; and hence it is, that all men, the wise and learned as well as the ignorant and narrow-minded, seize with avidity upon every shadow which gives the least promise of some delay in the inevitable termination of life.

The object of the present article is to recall the more striking features of the great pestilences of the past ages; to note the conditions of life under which they appeared; and, then, to refer to the success which has attended, and may yet attend, the efforts toward banishing such destructive maladies from society by an improved sanitation. It is of decided importance to understand what relation society sustains to the diminution of, not only the number, but also

the malignancy of those deadly disorders which have so often afflicted mankind.

The great bubonic plague is now almost a thing of the past. It will, therefore, best illustrate the object in view by showing the influence which our improved state of society has exerted upon one of the deadliest of all the scourges which have made their appearance since the beginning of time. Then, again, the history of the plague is, in itself, a record of almost unparalleled horrors, and thus presents an absorbing interest to any reader. The story of its outbreaks reads like the thrilling tales of the old wars, and the scene of its visitations presented more ruins, left behind more victims than could be met with upon the bloodiest battle-fields the world has ever known.

In reviewing the history of this fatal scourge, I will consider it under the twofold division of—

First, the special visitations of the plague mentioned in history; and,

Second, the characteristics of the disease as a distinct malady,

glancing under the former, at some of the most noted occurrences in the description of individual scourges, together with the time and manner of the pestilential outbreak; and under the latter at, 1st, the causes of the plague; 2d, its abnormal appearances both before and after death; 3d, its symptoms; and, 4th, its treatment, together with the probabilities of success in the direction of preventive measures.

FIRST—THE HISTORICAL VISITATIONS OF THE PLAGUE.

The plague, simple or malignant, is undoubtedly one of the most ancient maladies to which flesh is heir. It has shown a tendency to linger for a varying period of time in some special portion of the globe, the rest of the world being free, in the meanwhile, from its ravages. But it

may be stated in general terms, that the periodic return of the plague has occasioned the most destructive calamities in every continent, except that of America, for a time corresponding with the entire history of the human race. It has been known by as many names as the variations in its type would naturally suggest; but these have only been variations of one great original disease, and each of these apparent changes has only represented a difference in the degree of malignancy caused by accidental surroundings. But whether we term the scourge before us the plague, or pest, or pestilence, we mean the same fell malady which has dealt out death with such an unsparing hand throughout almost every nation, from the Libyan deserts to the shores of the Caspian, and from the Irish Channel to the frontiers of the Chinese Empire.

In dealing with this disease, we must remember that we are not considering a subject which belongs exclusively to the past. Although bereft of much of its ancient terror, it yet shows itself by no means rarely, and at times with its characteristic malignancy, in Russia, Egypt, India, China and Mesopotamia.

The earliest history of the bubonic plague is veiled in obscurity. It is useless to attempt to follow it in its dim, traditional wanderings in those remote times before systematic observations were regarded of any importance, or suspected of being of such inestimable value to posterity. It has been claimed, indeed, that we have no direct record, earlier than the third century before Christ, of any distinct pestilential outbreak. But if we accept, as indeed we must, the Mosaic account of some of the Egyptian plagues, which manifested the distinctive characteristic of afflicting both man and beast with most loathsome sores, we are carried back to the very dawn of history, in our efforts to trace the beginnings of this ravaging pestilence. The record of these earlier plagues seems to point to their identity with

those later bubonic plagues, which manifested the same malignant fatality in after ages, not only on the banks of the Nile, but in many other parts of the globe.

But to those who think that so remote an antiquity is entirely too fanciful, or that those old Mosaic accounts are not sufficiently explicit, satisfactory evidence can be presented of an age that is at least respectable, by referring them to those later records whose historic accuracy of description and explicitness of detail are wholly beyond dispute.

Thus, during the reign of Trajan, the physician, Rufus of Ephesus refers to the writings of Dionysius, who lived in the third century before Christ, and mentions the fact that these writings contain a description of an epidemic malady of pestilential buboes, which appeared in his day, in Libya, Egypt, and in Syria.

Rufus, who appears to have been one of the most noted physicians of his time, regarded the epidemic recorded by Dionysius as identical with the pestilence which ravaged these same countries during his own lifetime.

The historian, Livy, records a similar plague, which destroyed more than a million people in Africa alone.

The great antiquity of the plague in Egypt, and in other portions of Africa, would seem to be conclusively established by the frequent mention of such pestilences in so many of the most ancient records. In fact, Africa was looked upon for ages as its natural home, and it was not until the sixth century of the Christian era that the bubonic plague, in the reign of Justinian, first crossed the Mediterranean and made its appearance upon European soil. Although confined to Asia and Africa for such a vast period of time, when it did reach Europe, it took up its permanent abode.

From this period of European invasion begins that steady march of the pestilence, which moved forward with varying malignancy, it is true, but with a steady persistency, for a period extending over eleven centuries. Nothing could

stop, or even check, its fatal progress. Then, too, it showed a capriciousness in the times and places of its outbreaks, which seemed to defy every effort to master its dark and mysterious nature. If apparently checked in southern countries, after raging during an entire winter, it would at once be supposed that such a check resulted from the increasing heat and dryness of the summer months. But alas! for such a theory! Its term of life would be short indeed, since the awful scourge would suddenly reappear in the nations of the north, seemingly warmed into new life and power by that very heat which had just been supposed to have given it its death-blow in another part of the world.

No law could be made to control it, just as no boundaries could be found to limit it. Wherever man, with his poverty and its attendant uncleanliness, was found; wherever war, with its fields of blood and its thousands of decaying dead, poured forth its awful horrors and portentous crimes over the face of the earth, sweeping like a besom of destruction over the fairest creations of man; there the noisome pestilence would follow, transforming that which was already a purgatory, into such a hell as only a Dante could picture in his awful Inferno, while portraying the hideous ravings of the damned.

The sixth century was one succession of almost unbroken horrors. We find the plague, in the early part of that century, beginning in Egypt, and thence passing into Constantinople, whence it finally reached the Italian peninsula.

The outbreaks during this time had a most disastrous influence upon the declining fortunes of the Roman empire. Perhaps no other cause, so temporary in its nature, contributed so effectually toward the overthrow of that mighty fabric, which had already begun to crumble away. Threatened on every hand by innumerable foes, shaken to her foundations by the countless irruptions from the north, the imperial city of the seven hills, the haughty mistress of a

vanquished world, was already learning to bow her lofty head. It needed but little to complete her final ruin.

The last fatal blow fell with crushing force; and that empire which would yield to no mere human strength, which the power of a world could not shake, which was drunk with the blood of a hundred nations, fell at last beneath the stroke from the hand of the Omnipotent God. The pestilence appeared in the midst of other calamities, and with it a complete dismemberment of society, a disunion of every bond, confusion and terror, sufferings and death, until the whole of Southern Italy was well-nigh depopulated and fell an easy prey to the hordes of Lombardy.

The chief outbreaks during this century took place in Constantinople in the years 542 and 543, and again in 565; in Liguria in 571; while in 590 it made its appearance in Rome itself, during the pontificate of Gregory the Great. The death-rate in some of these visitations was almost fabulous. During its outbreak in 543, in Constantinople, ten thousand persons are said to have perished in a single day. In fact, there was scarcely a year toward the latter part of the sixth century which could be said to be entirely free from this fearful pest. It was preeminently a century of terror and gloom. It may well be called the dark century of the age of night, in human history.

To increase the direful gloom and dread despair attendant upon such an unbroken succession of pestilential horrors, we are informed that the plagues were accompanied by the most startling natural phenomena. Volcanic eruptions, tremendous cyclones, destructive earthquakes, and more portentous than all else, fugitive comets with gleaming tails were seen shooting athwart the sky, or hovering like gigantic monsters of doom over a fated world.

We can well believe that which history records as a fact, that the impressions made upon the survivors, by these scenes of awful death, were so profoundly despairing in

their nature, as to give rise to the general belief that the end of the world was at hand.

Passing onward from century to century, we find during the succeeding ages many visitations recorded, varying in type, it is true, but ever the same in the dark mysteriousness of its fatal power.

With this hasty reference to the appearance and reappearance of the plague, during these earlier periods, we will now pass abruptly from the sixth to the fourteenth century, when we will find ourselves confronted with the same old enemy, but wearing a new and still more hideous form.

During this century, the fourteenth of our era, the pestilence reached its culmination in deadly malignancy, and lead to the wildest anarchy and a complete abolition of all social law and order. It was during this period that the so-called Black Death made its first appearance, and began its awful work among the nations of Europe, rendering loathsome and hideous beyond description her most beautiful cities, and converting into one vast charnel-house her richest and fairest realms. Greece, Italy, Sicily, France, the Netherlands, Germany, England, and even the Scandinavian countries of the north, all were alike afflicted with this fatal pest, which was, as we shall soon see, but another form of the old plague which had proved so deadly in the past. We can perceive somewhat of the awful character of this visitation, and understand its unique position in the history of human disaster, when we learn that its devastations overturned all social order, broke down the ties of kindred and of home, subverted municipal law, and so completely depopulated the different nations of Europe, that hundreds of cities reverted to the crown through the death of every legal claimant, and many a princely title, and even kingly dynasty, became forever extinct.

The inimitable Boccaccio and the brilliant Petrarch have sketched in the liveliest manner many remarkable scenes

connected with this series of pestilential horrors in some of the Italian cities. It is utterly impossible for us to-day to conceive, in any adequate manner, of the fatal influence which so much despair and suffering and death exerted in those awful times, upon the moral nature of man. Details too loathsome for utterance, scenes too revolting for human belief, are recorded by those old writers of the past, who were themselves eye-witnesses of the way in which purity was forgotten, every tie of brotherhood trampled in the dust, and even the Deity himself turned into a universal scoff, while on every hand were heard continuous revilings of divine mercy and love. When we read of husbands forsaking the wives of their youth, the mother fleeing wildly from the contaminating touch of the child to whom she has given birth, the lover shunning in terror the idol of his heart, our minds reel beneath the effort to grasp the hideousness of the picture, and our senses refuse to credit the possibility of such a distortion of human mercy and love. We would fain believe that we are listening to the wandering delusion of a mind weighted down by some hideous nightmare of gloom, or the maniacal ravings of a brain consuming itself within the horrid and unearthly phantasms of its own creation, and gloating with diabolical malignity over the ruin and chaos, the blackness and crime, which its satanic delusions have turned loose upon this fairest realm of man, to pollute into an angel of darkness that beautiful and priceless soul created in the image of God. In moralizing over the conditions of human society in the midst of such visitations, our pride is humbled, and our confidence in human perfection in the midst of extraordinary trial and suffering is forever removed. We see that there are some evils too great to be borne; so great, indeed, as to paralyze completely the heart of human society, and to crush in a moment through every barrier erected by centuries of progressive civilization; evils, whose magnitude confounds the

brain until reason totters from her throne, and human affection is turned back in its course, and even an Eden itself would be changed into a veritable hell.

A continuation of this record would be but a continued delineation of the horrors which I have already attempted to describe; and yet, the great Plague of Naples in 1656, and the great London Plague of 1664 and 1665 are at least worthy of a passing notice.

In the last mentioned outbreak, one hundred thousand men, and in the former more than three hundred thousand, fell victims to the dreaded pestilence. The London plague was accompanied by social disorders even wilder in their character, and by a moral depravity even more revolting in its aspects, than were manifested in any of the great plagues of the Middle Ages. But with the exception that the dark features should be represented more hideous still, and the revolting details still more revolting, the same description will serve for this occurrence, which has portrayed, although slightly, the horrors and death attendant upon previous outbreaks of the same dread disease. Therefore, with the bare statement that even until the last decade, in our own century, the plague has continued to appear at times, in Egypt, Persia, India, and even in Russia, we will pass on to the consideration of the second division of our subject.

SECOND—THE NATURE AND CHARACTERISTICS OF THE PLAGUE AS A DISTINCT MALADY.

A disease which has cast such a baleful shadow across the long centuries of human history certainly appeals with unwonted power to the interest of all. No other affliction, except perhaps that of war, has played so important, though sad and fatal, a part in the great drama of human existence.

Unfortunately for us, the descriptions of the epidemics which occurred prior to the present century were, for the most part, the work of laymen. Or, if now and then, we

come across an account transmitted through some medical observer, he has nearly always been a physician markedly deficient in scientific culture. In this way, we can glean only a partial and confused account of the ancient visitations of the plague. This is equally true of those which appeared in the Middle Ages. We find numerous descriptions of the effects upon society, but very meager accounts of the actual appearances of the disease in the unfortunate victim seized within its fatal grasp. But we have sufficient data, gleaned here and there, from the accounts of laymen and physicians to enable us to form comparatively accurate notions with regard to the nature of the plague, if we are willing to take the trouble to collate the evidence and systematize it into a definite form. This is the object in what is now to follow.

The references contained in the old classical historians, although representing the opinions and observations of non-professional men, are still quite sufficient to enable us to recognize the ancient epidemics as identical with the plagues recorded in medieval and modern times.

The most important fact to be noted at this point is, that the plague is a distinct, separate, unique disease. It is not, as supposed by some, merely an exaggerated outbreak of the cholera, smallpox, or some other of the more familiar epidemics of the present day. Almost every adequate authority joins in the belief that the plague is as individual and separate a malady as is diphtheria, tuberculosis, or leprosy. It is not desirable to discuss this point at length in such a paper as this, since it more properly concerns the disputes which are controverted among members of the medical profession alone. But the facts yet to follow, which are of a nature to be understood by all, will doubtless leave an impression upon almost every mind that the plague is certainly widely different from any of the diseases with which we Americans have ever come in contact. Each reader can thus draw his own conclusions, from the descrip-

tion of the plague, as to its effects and phenomena in the human body, as to whether it should be regarded as a distinct and peculiar malady.

The first accurate description of the plague which we have had in modern times, was that presented by the French in Egypt, and by Surgeon Colville on the Volga and Euphrates.

During the years 1833 to 1845, a corps of French physicians was sent out by the government to make a careful and scientific study of the plague, which was then ravaging Egypt and other portions of Africa. Their reports, together with the observations made by Colville on the plague which broke out in 1878 and 1879 on the Volga and Euphrates, contain information sufficient to satisfy any candid mind or any seeker after information relative to this dreadful scourge.

FIRST—THE CAUSES OF THE PLAGUE.

We are confronted with the difficulties which one is prepared to expect beforehand, when we attempt to trace out the etiology or causation of the pestilence. From a careful comparison of authorities, ancient and modern, we are convinced that the plague cannot be referred to any distinct causative factor, with the same satisfaction which we feel with reference to the majority of other diseases. Of course I am now speaking of the actual, visible, perceptible causes, those which create the influences in connection with which the special germ, immediately producing the disease, is developed. In the light of modern research, there can be no doubt that this malady, in common with all other epidemic disorders, is immediately produced by the lodgment of some special germ or microbe in the human organism, which multiplies with greater or less rapidity, dependent upon the surroundings as favorable or unfavorable to their development and growth.

This cause is here taken for granted. But it is of great practical interest, as well as importance, to know what conditions of life are also favorable to the production of the plague.

As hinted in the introduction, not only the treatment but also the prevention of this dire disorder, must necessarily depend in great measure upon the success with which the details of its causation are mastered, especially by the physician.

The most obvious and important factor in the production of the bubonic plague, is poverty, with all of its attendant evils. The filth, uncleanliness of person, poor drainage, bad food and improper hygiene in general, all of which appear more or less in the life of those subjected to great and continued poverty, are powerful agents in the production of plague. This fact is evident from the prevalence of this epidemic in those countries where the severest poverty has been known to exist. Thus Egypt, India, and some parts of Russia, have been, from time to time, the favorite abodes of the plague. Now, it is a notorious truth that in these same countries the condition of the poor is most wretched indeed. Not only is there an absence of all nutritious food, but their surroundings are filthy and unhealthful beyond description. These things, in connection with their personal habits, never bathing from one year to another, and living with an utter disregard for the simplest and most fundamental laws of hygiene, render them peculiarly susceptible to this disease. This connection between poverty and the plague is more than accidental. It has been noted, and commented upon by many of the oldest observers of this mysterious malady.

It has appeared with such persistency in those countries, which, like some parts of Asiatic Turkey, press severely upon their peasantry, that we can no longer doubt that there is the relation of cause and effect between the poverty

found among the oppressed people and the outbreak of the pestilence among them.

It has also been noted that, in the countries mentioned, numerous famines have occurred from time to time. In many instances these long-continued famines—which are but the concentration of years, it may be of ages, of poverty,—have been immediately followed by a violent outbreak of the plague.

In this very fact we find an answer to the question, why should the plague be so severe in its ravages, and so frequent in its appearance, during the earlier centuries and the Middle Ages, while in our times it is almost extinct?

On account of the frequent wars, draining the countries of all able-bodied men, the soil often went without sufficient cultivation, in the past, to provide against a year of drought, which led to the failure of even the scanty supply which each year had been accustomed to produce. Famine would inevitably result.

This condition of affairs has long ceased to exist, at least to any extent in civilized countries. Famines rarely occur.

It is significant that the plague has simultaneously disappeared from civilized communities, and is remanded to those countries where famines still occur, chiefly, however from some error in the method of government, or a failure to appreciate the true laws of political economy. But too much importance must not be ascribed to famines, in the production of the plague. The other, and more usual results of poverty, have had quite as much to do with the appearance of the scourge. Indeed, famine, without the filth, bad drainage, and general disregard for personal hygiene, met with in the midst of extreme poverty, could not produce the pestilence. Its disappearance to-day from civilized communities is due not only to the disappearance of famine, but also to the gradual though wonderful improvements in all the surroundings of the social life. When we

consider the vast improvement of the present age over medieval and ancient times, in the cleanliness of our surroundings, in the marked preference for the bath which is shown in our times, in our excellent systems of house, town, and city drainage, we understand at once why the plague has disappeared. In referring to the condition of European and Asiatic cities during the Middle Ages, we wonder that there was not even more of disease than really existed.

They practiced no drainage systems whatever, and their cities were inconceivably filthy. In personal hygiene they were no farther advanced. They rarely ever bathed. Instead of using water and soap to remove the accumulations upon the skin of their persons, they resorted to the use of perfumes to conceal the odors of uncleanliness. They believed in deodorants rather than in disinfectants. We have reversed the practice, and use disinfectants to destroy filth, instead of deodorants to conceal it. What has been said about the uncleanliness of the cities of the past will be readily appreciated by any one traveling in the Orient to-day. The cities of the East have not made corresponding progress. They are still where the cities of Europe were several centuries ago. The people of the greater part of Asia live in the midst of surroundings which to us seem full of disease and death; no drainage, no scavengers other than what nature has supplied, and a blind confidence is exhibited in the bright sun alone, which is the only thing that does protect them from the effects of their loathsome environments. If such a condition of things exist in the glorious light of the nineteenth century, the supposed culmination of every effort at human progress, the supposed realization of the utmost dreams of the sanitary philanthropist, what must have been the actual condition of things in the twelfth century?

It is thus clear, that an understanding of the conditions of life in the past, which served to bring about outbreaks

of the plague, must serve to emphasize the view already expressed with reference to the causative relation which poverty bears to the appearance of pestilential disorders.

Again, we may mention war as a cause, and an important one too, in the production of bubonic plague.

Some of the worst epidemics in history, have appeared after a series of sanguinary battles, which have left thousands of unburied corpses upon the field of conflict. These unburied victims, decomposing in the sun, tainted the air for leagues around, and a pestilential septicemia was the inevitable result.

The very fact that the plague is characterized by discharging buboes, indicating some morbific poison working in the blood, proves conclusively that this tainted air was an important factor in the production of pestilential outbreaks. These discharging buboes led to the designation "bubonic plague."

Just as an unfortunate wound in the dissection room, or in the performance of a post-mortem, entails upon the victim all the horrors of blood-poisoning with its pyemic and septicemic manifestations, so in the case of those exposed to the influence of an atmosphere tainted by thousands of decaying bodies, there would naturally result a similar poisoning of the blood, manifesting itself, however, in far more disastrous ways.

But notwithstanding the fact that these influences mentioned so evidently bear an important causative relation to the plague, yet it must be admitted that they are not the only causes.

There is something mysterious and incomprehensible in the whole question of its causation, and there remains yet much for the skill and science of future generations to unravel.

But if the causation of this fearful malady is so obscure,

the second division, or the abnormal appearances of the bodies of its victims, presents us with even more negative results. But we will consider for a moment this aspect of the question, and see what different observers have said concerning the

SECOND—PATHOLOGY OR ABNORMAL CHANGES PRODUCED IN THE BODY OF THE VICTIM SEIZED WITH THE PLAGUE.

Post-mortem examinations have shown a general resemblance to death from typhus fever. But unlike typhus, in this disorder there is a marked affection of the lymphatic glands, which is entirely absent in the victims of typhus. Also, the lungs, brain, and right side of the heart have been almost always found distended with blood. The blood itself manifests the peculiarity of a rapid decomposition, pointing to the presence of some definite blood-poisoning, as is seen, for example, in the blood of persons dying from anthrax or malignant pustule. The blood is also very dark in color. The spleen and liver show a marked hypertrophy, and this enlargement of these organs again illustrates what was said with reference to the presence of some very active poison in the blood. One of the most peculiar appearances in this disease, is the presence of numerous petechiæ, or patches of dark blood, over the surface of the body, caused by the extravasation of blood beneath the skin. The extent of such blood-patches varied in different epidemics of the plague, but they seem to have always been present to some extent, no matter how mild the outbreak. When the plague received the name of the "black death," this formidable appearance was more marked, perhaps, than ever before. It is certain, however, that it was to the presence of these petechiæ that this designation owed its introduction into common use. I should add, that this extravasation of blood beneath the skin only ap-

peared in those cases in each epidemic in which the attack assumed a fatal form. But this will be referred to again under the head of symptoms, to which division we will at once pass along.

THIRD—THE SYMPTOMS OF THE PLAGUE.

Fortunately for one interested in this subject, there is no lack of evidence, or rather of descriptions, of the symptoms of this fearful disorder. Each inquiry in this direction, meets with abundant answers. The symptoms, as described by the oldest observers of the earliest authenticated visitations of the plague, are found to be identical with those most recently described.

Indeed, it is this striking coincidence in description, which warrants us in regarding the pestilential outbreaks in history as a continued succession of the same fatal malady. Writers upon this subject have divided the plague into pestis minor and pestis major, this classification being based upon the violence in the symptoms, rather than upon any radical differences in the real nature of the disease. In the minor form of the plague pestilential buboes are noted, giving rise to the term bubonic plague, since these buboes are initial, and therefore characteristic, symptoms. Marked swellings early appeared in the groin, arm-pit, and in various other glands throughout the lymphatic system. Little or no fever was present in this milder variety, and the general or constitutional disturbance was very slightly marked.

But in the graver form, or pestis major, in addition to the symptoms already mentioned, more formidable ones were always observed. Thus, the invasion of the disease would be very violent and sudden, and usually ushered in by a severe chill, accompanied with frightful pains in the back and in the upper and lower extremities. These introductory symptoms were soon followed by a profound

nervous prostration which oftentimes amounted to absolute coma. But if this tendency to unconsciousness was absent, the nervous disturbances assumed the form of an uncontrollable anxiety. The victim's mind would dwell upon the darkest fancies, picturing to itself the most hideous illusions.

These fantastic visions might be either grotesque or horrible but in the latter case reason was often hurled from her throne by the awful nightmares of thought with which the loathsome pest weighed down the brain of the stricken man.

Great bodily restlessness was frequently observed, together with dizziness, great thirst, extreme headache, and a deep-seated pain in the region of the stomach. The eyeballs were swollen, the conjunctiva fiery red, while the tongue was greatly enlarged, dry and black, although some report having seen cases in which it became very white instead. A short time before death occurred the collection of blood-patches beneath the skin, above referred to, would take place. The appearance of this symptom was always regarded as a sign of a speedy and unavoidable death.

Again, hemorrhages often took place from the lungs, and this also was looked upon as a very dangerous sign.

As to the length of the course which the plague usually ran, it depended upon the form, as to whether it was pestis minor or major. In the minor form, the disease ran its course in from ten to sixty days, and recovery almost always took place. But in the major variety, the course varied from a few hours to thirty days. It was usually fatal, however, on the fourth day. But if the patient survived the sixth day, there was then entertained every hope of his recovery.

Such, in brief, is the description of the general characteristics of this awful malady. If one truth stands out

clearer than all the rest, it is that the plague must be regarded as a distinct, unique disease, one too, in the presence of which the most gifted and brilliant physicians of the ages have stood awed and trembling, as in the presence of a mysterious scourge sent by an avenging God to chastise the nations of the earth.

Its occult nature has never yet been fathomed, and we still view it with an indescribable fear, such fear as no other of the dread visitants of humanity can excite. We can rightly boast of specifics, in the treatment of some disorders, or at least of an ability to master their difficulties, but we have nothing in the whole range of our medical resources, by means of which we can successfully meet and crush this powerful enemy of man.

This brings us to the fourth and last division of this subject, which is—

FOURTH—THE TREATMENT AND POSSIBLE PREVENTION OF THE PLAGUE.

The most that can be done, and all that ever has been done, in the way of treatment, is the use of remedies to alleviate the symptoms as they appear. It is impossible to treat it in a rational manner, since we do not understand the source of the disorder. Temporary relief may be afforded from some of the more violent suffering, but the disease runs its course entirely unchecked by anything we can do. It is thus evident that nothing can be said about any scientific treatment. Of course the physicians of the past instituted different lines of treatment, depending upon the individual judgment of the medical attendant, when there was one. But in this they merely followed, as above pointed out, the suggestions which special symptoms indicated.

Farther than this they did not and could not go. In fact, this disease has been chosen, in great part, because of its being a perfect illustration of our helplessness in the

presence of a malady which has ever baffled the loftiest human skill. It certainly teaches humility in the presence of a power whose strength can only be measured by a just appreciation of that might which is enthroned in the heavens, exhibiting itself to a wondering world through frequent visitations of wrath, in chastisement of the frailties of man. But there is hope in the midst of our very helplessness. Our inability to cope with such a disease forces us to take refuge in what is called preventive medicine. If we cannot cure a given malady, it may be possible, at least, to prevent its ravages, by improving the conditions of human society. Is it possible to prevent the outbreak of the plague?

This question has been asked for more than a century, and it has already received a definite answer in the affirmative. When we contemplate the frightful ravages of this scourge of the nations, we are compelled to admit that in the crushing out of the plague from civilized communities, the grandest triumph of the century has been achieved. When I say the grandest, I include all the possibilities, with regard to all other deadly epidemics, which such a victory opens up before the medical profession.

The plague has been so far conquered by the gradual improvement of the sanitary condition of the countries of Europe.

The last lingering germs seems to have been finally destroyed in England by the great London fire, and in Constantinople, as late as the beginning of the present century, by the providential conflagration which so nearly destroyed the whole capital of the Moslem world. The efforts of the century have been along the lines of purifying the lives and homes of men. Take this work, in connection with the efforts towards a more perfect town and city sanitation, and the key is given to the puzzle of doing away with not only the plague, but also, in time, with the other dangerous

foes to human life. If the plague, so deadly, so malignant, so rapidly fatal, has been conquered, what can we not expect with reference to the other epidemics which afflict modern life? No victory, now, can be great enough to occasion even surprise, for the victory already gained transcends even the possibilities of the future.

HEMORRHAGIC FEVER.

By P. L. HUDSON, Cochran, Ga.

I shall take up but very little of your time in the reading of this paper. This is a subject we learn but very little of from authors or books.

The discussion of this disease will be based more on coming in contact with it and general observation than from theoretical views. I have never read anything that ever afforded me any satisfaction as to the real character and nature of the disease. We get from no books any treatment that I can learn, that marks out a proper course to follow in handling this fearful malady.

When I began to write this paper I found that the opinions of medical men differed from me so far as treatment goes, but those men I learned afterwards had had but little experience with this disease. I have been practicing a good long while and was very successful in the treatment of it until in the last two or three years, during which time I have not lost one single patient and have managed several. Being delighted with my success, I determined to give my small and limited knowledge to the medical profession.

This dreadful disease which we call hemorrhagic fever, is malaria hematuria.

I do not live in a climate confined to a special morbific agent commonly known as malaria that does not produce other fevers. I come in contact with fevers in which we have no malaria. This is one in which I find the sole cause

to be malaria or a result thereof. In twenty years' practice I have only found it in one negro, and he died.

Gentlemen, does a man, child or woman have hemorrhagic fever without there being considerable traces of malaria throughout the whole system?

If so, I have got my first patient to see. The reason I ask this question is, that I have heard a medical man say he had come in contact with the disease without the traces of this poison.

The first point your attention was called to was the cause; this leads me now to the symptoms, which are as follows: The patient is taken with a chill, not very decided in every case. I have known patients to have chills for twelve months, longer or shorter, before this disease ever fully developed. It is engorgement of bile pigment that develops it. These chills are of short duration at first, unnoticed by patient. He may be attending to his daily avocation, not necessarily confined to bed. At the expiration of two or three, perhaps more, of these chilly sensations, the patient is forced to bed with a rise of temperature of one hundred, or sometimes one hundred and three. In my experience you will find all patients nervous, restless, tossing from one side of bed to the other; always wanting water or something to drink. About this time patient has a desire to micturate, the color of the urine being a dark coffee or cherry red, and often very copious. The quantity voided is about a half pint, more or less, and in my experience is often less.

The patient does not seem to experience any pain before or during the voiding of this urine, other than a dead aching sensation in the region of the kidneys. This is due to engorgement of the parts (kidneys). Just here some of the profession will differ from me as to this fluid (urine). I have submitted it to a microscopic test and find it contains no blood corpuscles—though I have never subjected it to

a spectroscopic test. I often find at the outset intense nausia and vomiting, and at the expiration of six or eight hours, sometimes earlier, I find decided jaundice. I invariably find cold feet, also blue lips, cold fingers, blue at root of finger-nails. With these symptoms no one can be mistaken in diagnosing his case. This leads me to the most important part of the disease, which is the treatment. All the indications and symptoms at the very beginning of this malaria hematuria indicate purgatives and diuretics. The sooner you can begin with them the better for your patient. For the intense nausea and sick stomach I give large quantities of warm water. Let the patient drink as much as he possibly can. After a thorough washing out of the stomach in this way you will find patient will continue to call for warm water to drink. I always allow him to have it just as hot as can be drunk, after being washed out in small quantities.

I do this to palliate and to alleviate the excited mucous membranes of the stomach. I always place a mustard plaster over the stomach of large size. Immediately after doing this I give an enema of warm water, about a quart or more. I add to that water the yelk of one egg, spirits of turpentine, fifteen or twenty drops.

You will find during this vomiting stage very cold feet. Of course you can do nothing for that, only try to keep up hot applications. By this time if vomiting is not controlled, I give half grain of cocain hydrochlorate every half hour until I give one grain and a half, owing to age of patient. This should be given in capsules of course.

I do not like the use of morphine or other opiates, from the fact they stop secretions and prevent the liver and kidneys from performing their proper functions. I do not give antipyretics, as the heavy purgations and diuretics and emetics of warm water will control the temperature. You will always find the temperature during the first forty-eight

hours of this fearful fever to be one hundred and five degrees.

As a purgative—listen: I give from ten to twenty grains of calomel, with equally as much soda bicarb. every hour to two hours, until I get large dark green or black coal-tar stools. I have given patient as much as one hundred and fifty grains of calomel in forty-eight hours. Instead of depleting the system or weakening the patient, he or she always seems to strengthen under it and make a good and quick recovery. I never hesitate, if liver is dull or dormant, to either paint over the region of it with iodine or put on a blister.

As to diuretics, I give acetate of potash, one ounce to four ounces of water; allow it to dissolve well, and give a tablespoonful in a wine-glass of water or more every hour or two until urine resumes its normal color. When all this is done, the urine its natural color, stools more natural, the vomiting controlled, the patient quiet with no cold feet, blueness of nails all gone, then you can rest assured that your patient is safe. This should all be accomplished in forty-eight hours. Take your patient's temperature then and you will find it to be about one hundred or ninety-nine; never will go higher properly treated, but will continue downwards until the normal temperature is obtained. My after-treatment is as follows: Tincture of nux vomica and Fowler's solution of arsenic, equal parts; ten drops three times daily, well diluted. If patient is very anemic, which you will so often find, I give muriatic tincture of iron in connection with the above.

In my experience you never find a patient with this fever until the whole system is poisoned with this enormous quantity of malaria. I never give quinine until skin begins to clear up; then I give three or four grains three times daily. This treatment I have given you is an adult treatment altogether.

Gentlemen, let me impress upon you, when called upon to treat this fever, go to your patient at once, as the duration of it is very short, and requires prompt and heroic treatment. Stay with your patient and keep bowels and kidneys acting very freely.

Possibly you may ask me why I do not use quinine. My sole reason for this is that it often keeps the stomach torn up, and again, it is so slowly assimilated that you have not the time to wait on it; again, I have found it indicated only as a tonic in after-treatment, and but very little then. I use no hemostatics, as I find the urine, no matter how red, does not contain any blood-corpuscles, provided there are no organic lesions about the kidneys or bladder. Nearly all my last patients were discharged in five days. I caution them as to diet. Of course I advise light diet. I never worry about the temperature or circulation, as they will take care of themselves if you are successful in ridding the system of this engorgement of malaria. You may ask me what gives the urine this color in this fearful disease. As I have said it contains no blood-corpuscles. I find it to be hemoglobin and bile pigment.

Gentlemen, the cause is malaria, so treat it for the same.

CENTRAL LACERATION OF THE PERINEUM DURING LABOR.

By P. R. CORTELYOU, Marietta, Ga.

In reporting this case to the Association, I am led to do so, not because of any new method of treatment to recommend or any brilliant result to record, but merely from the extreme rarity of such an accident, never having seen a similar one reported; and upon investigation, as far as I have been able, not finding anything in regard to this class of cases, except being mentioned in some of the works on obstetrics as a very rare possibility.

About seven o'clock on the morning of November 11, 1896, I was called in consultation with Dr. E. J. Setze, but on my arrival at the house labor had terminated.

The doctor gave me the following history of the case. He had been called the night previous, and found the patient, Mrs. G., a primipara, aged about twenty-six years, in the first stage of labor. She had been in her usual health during the whole period from the time conception had taken place. As he lived near the patient, he returned home, directing the nurse to have him called as soon as the pains became strong and continued. About 2 a.m. he was summoned, and found labor progressing nicely, the cervix being well dilated and the vertex presenting. The pains continued regular and strong, and all went satisfactorily until the head pressed on the floor of the perineum, and then, although the pains were good and strong, the perineum did not relax, but with each pain became more and more tense,

the head making no advance. Thinking it might be necessary to do episiotomy, I had been called.

During a very hard pain the head had passed into the world, making a lateral tear through the perineum, about one and a half inches below the fourchette and anterior to the rectum. The child and placenta passed through the wound, which we found on examination to be between four and five inches in length and with rough ragged edges.

The doctor said that, using all his strength to keep back the head and raise it up, he had been unable to prevent the accident.

Upon further consultation it was deemed best to call extra counsel, and Dr. Virgil Hardon, of Atlanta, came up in the afternoon. The patient was then put under the influence of chloroform, and after thorough cleansing and with full antiseptic preparation, Dr. Hardon closed the wound, using twenty-two sutures. The operation lasted one hour and a half.

The patient's condition at the close was very good, and at 7 o'clock pulse was 80, temperature 99 3-5; but being restless was given ¼ grain of morphine hypodermically. The urine was taken with catheter; beef tea and broths ordered.

November 12, 8 a.m. Temperature 101 degrees, pulse 96; 5:30 p.m., temperature 102 3-5. Complained of pain and cramp in left leg, and was given ¼ grain of morphine hypodermically.

November 13. Nurse reported quite a free sweat at 2 a.m. Temperature ranged during the day from 101½ to 103 2-5. Injections of bichloride solution used freely, also iodoform locally. Urine still taken with catheter. Castor-oil one-half ounce given, which caused frequent actions during the day and night.

November 14. Temperature 101 4-5 to 102 3-5 during the day. Dover's powder and bismuth were given to check too free action of bowels. Some of the stitches ulcerating.

Breasts were emptied and bound. Complained of cramp in the legs during the day.

November 15. Many of the stitches were removed, as they had cut out, and the lochial discharge passed through the opening. The antiseptic douches and iodoform were used faithfully, and every effort made to keep the parts clean.

November 16. Remaining stitches removed, as they were doing no good. Quinine given freely, tonic, milk and beef essence. Urine still taken with the catheter. Temperature 101 1-5 to 103 1-5. Involuntary passages from the bowels.

November 17. Condition unchanged and continued same with gradual failure of vital forces until December 19, when death occurred.

During the whole course of treatment every effort was made to prevent septic infection, but without success. A very intelligent and thoroughly trained nurse was in charge from the first till the case terminated. The wound generally had a healthy appearance, although there was considerable sloughing and only a thin band of tissue was left between the lower margin of the vulva and the wound.

CONSTITUTION AND BY-LAWS

OF THE

Medical Association of Georgia.

CONSTITUTION.

(ADOPTED 1873.)

ARTICLE I.

NAME.

The name and style of this Association shall be "The Medical Association of Georgia."

ARTICLE II.

OBJECTS.

Section 1. The object of this Association shall be to organize the medical profession of the State in the most efficient manner possible; to encourage a high standard of professional qualifications and ethics, and to promote professional brotherhood.

ARTICLE III.

MEMBERS.

Section 1. There shall be only one class of members in this Association. Any regularly educated white physician, who resides within the limits of this State, who is a graduate of a regular Medical College in good standing, and who adopts and conforms to the Code of Ethics of the

American Medical Association, shall be eligible to membership in this body.

ARTICLE IV.

OFFICERS.

Section 1. The officers of the Medical Association of the State of Georgia shall be as follows: 1st. One President; 2d. Two Vice-Presidents; 3d. One Secretary; 4th. One Treasurer; 5th. Five Censors.

Sec. 2. The Presidents shall be elected for one year; the Vice-Presidents for one year; the Secretary for five years, the Treasurer for five years—but every officer shall continue in office until his successor is elected and installed in office.

Sec. 3. The Board of Censors shall be elected at the present session by the Association—one for a period of five years, one for four years, one for three years, one for two years, one for one year; and annually thereafter the vacancy occurring in the Board of Censors shall be filled by election.

ARTICLE V.

PRESIDENT.

Section 1. The President shall be the chief executive officer of the Association. He shall preside at all the meetings of the body, preserve order, and give the casting vote when necessary, and perform such other duties as parliamentary usages impose on presiding officers.

Sec. 2. He shall prepare and deliver, at the opening of each annual session, an address on some subject connected with the interests and objects of this Association.

Sec. 3. He shall appoint annually the requisite number of delegates to the American Medical Association, and to such other scientific bodies as it may be expedient to have this Association represented in.

Sec. 4. He shall appoint an orator, whose duty it shall be to prepare and deliver a public address on some subject connected with medicine, or the medical profession, at the next annual meeting after his appointment.

Sec. 5. He shall, in the intervals between the annual sessions direct and control the general policy and business of the Association, but always with careful attention to the precedents and customary usage of the Association, and to its constitutional provisions.

ARTICLE VI.

VICE-PRESIDENTS.

Section 1. Vice-Presidents, in their order, shall, in case of the absence or the death of the President, discharge all the duties belonging to the presidential office.

ARTICLE VII.

SECRETARY.

Section 1. The Secretary shall have charge of all the books, papers and records of the Association, except those belonging to the office of Treasurer.

Sec. 2. He shall record the minutes of the Association at all its meetings.

Sec. 3. He shall conduct the correspondence of the Association under the direction of the President, and shall be Chairman of the Publishing Committee.

Sec. 4. He shall keep the roll of the members of this body who have retained their membership by compliance with the provisions of this Constitution, and also the names of those who have forfeited membership, together with the cause of such forfeiture.

Sec. 5. In the absence of the Treasurer he shall collect the usual dues of the members in attendance at the regular session.

Sec. 6. The necessary expense incurred by the Secretary in attending the annual session shall be defrayed out of the funds of the Association.

ARTICLE VIII.

TREASURER.

Section 1. The Treasurer shall collect the annual dues and have custody of all the moneys belonging to the Association, and shall respond to the calls of the Secretary, by order of the President, as far as he may have funds in his possession.

Sec. 2. He shall make annual reports of the financial condition of the Association, and the several amounts received during the year, and from whom; the several amounts due by the Association, if any, to whom, and on what account; the several amounts due to the Association, if any, by whom, and on what account.

Sec. 3. The necessary expense incurred by the Treasurer in attending the annual sessions shall be paid out of the funds of the Association.

ARTICLE IX.

CENSORS.

Section 1. The Board of Censors shall hold annual meetings concurrently with the annual sessions of the Association, to whom shall be referred all applications for membership, with vouchers from two members; and in such case their decision shall be reported to the body for action. Three of their number shall constitute a quorum, and the Chairman and Secretary shall be designated by the President.

Sec. 2. They shall take cognizance of all offences against the Association or its Code of Ethics, and shall be authorized to strike from the list of membership all violators of its regulations, and shall report the names of the

individuals, and the offense from which action has been taken, immediately to the Association, at which time, or at the next succeeding meeting, all such individuals may have the right to appeal to that body.

Sec. 3. In the event of a failure of a quorum of the Board of Censors to attend at any annual meeting, it shall be the duty of the President to supply the vacancy by a temporary appointment.

ARTICLE X.

FINANCES.

Section 1. Every member of the Association shall pay annually into the Treasury such sum as the Association may determine, which amount, it is expected, will be paid during the session of the body.

ARTICLE XI.

CONSTITUTION.

Section 1. The Constitution shall take immediate effect from its adoption.

Sec. 2. The By-Laws now in operation, and Order of Business, are adopted, so far as they agree with the new Constitution.

ARTICLE XII.

ANNUAL MEETING.

Section 1. The annual meetings shall take place on the third Wednesday in April, and at such place as shall be designated by a majority of the Association.

ARTICLE XIII.

AMENDMENTS.

Section 1. Any amendment that may be offered to the Constitution shall lie over until the next annual meeting; and for its adoption at such meeting shall require a two-thirds vote of all present and voting.

BY-LAWS.

(Adopted 1875.)

ORDER OF BUSINESS.

The Order of Business of this body, unless ordered by a two-thirds vote of the members, shall be as follows:

1. Calling the Association to order by the President, or, in case of his absence, by one of the Vice-Presidents.
2. Report of Committee of Arrangements.
3. President's Address.
4. Reading notes from absentees.
5. Election of members.
6. Reports of Special Committees.
7. Report of Committee on Publication.
8. Report of Committee on Necrology.
9. Report of Committee on Program.
10. Voluntary Communications. (To be read by title and held subject to call of the Association.)
11. Selection of place for next annual meeting.
12. Unfinished business.
13. New business.
14. Installation of new officers.

Resolved, That the officers of the Association be elected by ballot, without a nomination, at eleven o'clock on the morning of the last day of the Association, and if there is no election on the first ballot, the three names receiving the highest number of ballots shall be voted on, the other names being dropped. If there is no election on second ballot, the two names receiving the highest number of ballots shall be voted on until an election is had.

STANDING COMMITTEES.

The Committee of Arrangements shall consist of five members who reside at the place selected for the ensuing meeting. It shall be their duty to provide suitable accommodations for the meetings of the Association, and to superintend the registration of members in attendance.

The Committee on Publication shall consist of four members in addition to the Secretary, who is Chairman *ex officio*. They shall provide for the publication of the minutes of the session, together with such papers as are deemed worthy. They shall also append to each volume of Transactions a copy of the Constitution and By-Laws of the Association, Roll of Membership and Code of Ethics of the American Medical Association.

The Committee on Necrology shall consist of five members, whose duty it shall be to procure memorials of deceased members, and present them for publication in the Transactions.

ASSESSMENTS.

Each member shall pay annually to the Association such sums as the Association may determine.

OFFICERS—TIME OF ASSUMING THEIR DUTIES.

The Secretary and Treasurer shall enter upon the duties pertaining to their office at the time of their election; the President, Vice-President and Censors, at the commencement of the annual meeting succeeding their election.

AMENDMENTS.

I.

APPLICATION FOR MEMBERSHIP.

The names of all applicants for membership shall first be presented to the Association in a body, and then referred to the Board of Censors. (See, also, Duties of Censors—Constitution, Article IX., Section 1.)

II.

INITIATION FEE.

An initiation fee of five dollars shall be required of every new member hereinafter elected to the Association; which fee must accompany the application for membership.

III.

ANNUAL ASSESSMENTS.

The annual assessment of every member of the Association shall be three dollars.

IV.

MEMBERS IN ARREARS.

The name of any member who shall fail for two consecutive years to pay the annual assessment shall be dropped from the roll of membership, the Treasurer notifying such member of the state of his account.

V.

TREASURER'S CALL FOR DUES.

The Treasurer shall, immediately after the meeting of the Association, issue a call for the dues of absent mem-

bers, by postal card, impressing upon them the need of prompt payment of the small assessment herein provided, by every member of the Association, and notifying them of the constitutional provision requiring the names of delinquents to be stricken from the roll of membership by the Secretary.

VI.

LIFE MEMBERSHIP.

The assessment for life membership shall be thirty dollars, exempting from annual dues, the sum so received to be invested and the interest used to pay the annual dues of said life member. A member may hold as many life memberships as he desires, and shall be entitled to one vote for each.

VII.

PAPERS AND PUBLICATIONS.

1. No paper shall be read before this Association, by title or otherwise, until a complete copy of such paper shall have been placed in the hands of the Secretary for publication in the Transactions. This rule shall not prevent the publication of such paper in any medical journal at any time.

2. No article shall be published in the Transactions until it shall have been recommended by the Committee on Publication.

3. Repeals all conflicting laws.

VIII.

AMENDMENTS.

Any change in these By-Laws can only be made by a vote of two-thirds of all the members present.

The Secretary desires to call attention to the following

resolution, which was adopted by the Association, in Augusta, 1886, and while it was not offered as an amendment to the By-Laws, yet, if carried out, it would operate in that way. The resolution is as follows:

"*Resolved*, That the second day of the next and each subsequent session of this Association be set apart for *omnibus* discussion."

CODE OF MEDICAL ETHICS.

CHAPTER I.

OF THE DUTIES OF PHYSICIANS TO THEIR PATIENTS, AND OF THE OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

ARTICLE I.

DUTIES OF PHYSICIANS TO THEIR PATIENTS.

§ 1. A physician should not only be ever ready to obey the calls of the sick, but his mind ought also to be imbued with the greatness of his mission, and the responsibility he habitually incurs in its discharge. Those obligations are the more deep and enduring, because there is no tribunal, other than his own conscience, to adjudge penalties for carelessness or neglect. Physicians should, therefore, minister to the sick with due impressions of the importance of their office; reflecting that the ease, the health, and the lives of those committed to their charge depend on their skill, attention and fidelity. They should study, also, in their deportment, so to unite *tenderness* with *firmness*, and *condescension* with *authority*, as to inspire the minds of their patients with gratitude, respect and confidence.

§ 2. Every case committed to the charge of a physician should be treated with attention, steadiness, and humanity. Reasonable indulgence should be granted to the mental imbecility and caprices of the sick. Secrecy and delicacy, when required by peculiar circumstances, should be strictly observed, and the familiar and confidential intercourse to which physicians are admitted in

their professional visits should be used with discretion, and with the most scrupulous regard to fidelity and honor. The obligation of secrecy extends beyond the period of professional service; none of the privacies of personal and domestic life, no infirmity of disposition or flaw of character observed during professional attendance should ever be divulged by the physician, except when he is imperatively required to do so. The force and the necessity of this obligation are indeed so great that professional men have, under certain circumstances, been protected in their observance of secrecy by courts of justice.

§ 3. Frequent visits to the sick are, in general, requisite, since they enable the physician to arrive at a more perfect knowledge of the disease—to meet promptly every change which may occur, and also tend to preserve the confidence of the patient; but unnecessary visits are to be avoided, as they give useless anxiety to the patient, tend to diminish the authority of the physician, and to render him liable to be suspected of interested motives.

§ 4. A physician should not be forward to make gloomy prognostications, because they savor of empiricism, by magnifying the importance of his services in the treatment or cure of the disease. But he should not fail, on proper occasions, to give to the friends of the patient timely notice of danger when it really occurs; and even to the patient himself if absolutely necessary. This office, however, is so peculiarly alarming when executed by him, that it ought to be declined whenever it can be assigned to any other person of sufficient judgment and delicacy; for the physician should be the minister of hope and comfort to the sick; that, by such cordials to the drooping spirit he may smooth the bed of death, revive expiring life, and counteract the depressing influence of those maladies which often disturb the tranquility of the most resigned in the last moments. The life of a sick

person can be shortened, not only by the acts, but also by the words or the manner of a physician. It is, therefore, a sacred duty to guard himself carefully in this respect, and to avoid all things which have a tendency to discourage the patient and depress his spirits.

§ 5. A physician ought not to abandon his patient because the case is deemed incurable; for his attendance may continue to be highly useful to the patient and comforting to the relatives around him, even in the last period of a fatal malady, by alleviating pain and other symptoms, and by soothing mental anguish. To decline attendance under such circumstances would be sacrificing to fanciful delicacy and mistaken liberality that moral duty which is independent of, and far superior to, all pecuniary consideration.

§ 6. Consultations should be promoted in difficult or protracted cases, as they give rise to confidence, energy, and more enlarged views in practice.

§ 7. The opportunity which a physician not unfrequently enjoys of promoting and strengthening the good resolutions of his patients, suffering under the consequences of vicious conduct, ought never to be neglected. His counsels, or even remonstrances, will give satisfaction, not offense, if they be proffered with politeness and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

ARTICLE II.

OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

§ 1. The members of the medical profession, upon whom is enjoined the performance of so many important and arduous duties towards the community, and who are required to make so many sacrifices of comfort, ease, and health for the welfare of those who avail themselves of

their services, certainly have a right to expect and require that their patients should entertain a just sense of the duties which they owe to their medical attendants.

§ 2. The first duty of a patient is to select as his medical adviser one who has received a regular professional education. In no trade or occupation does mankind rely on the skill of an untaught artist; and in medicine, confessedly the most difficult and intricate of the sciences, the world ought not to suppose that knowledge is intuitive.

§ 3. Patients should prefer a physician whose habits of life are regular, and who is not devoted to company, pleasure, or any pursuit incompatible with his professional obligations. A patient should also confide the care of himself and family as much as possible to one physician; for a medical man who has become acquainted with the peculiarities of constitution, habits and predispositions of those he attends is more likely to be successful in his treatment than one who does not possess that knowledge.

A patient who has thus selected his physician should always apply for advice in what may appear to him trivial cases, for the most fatal results often supervene on the slightest accidents. It is of still more importance that he should apply for assistance in the forming stage of violent diseases; it is to a neglect of this precept that medicine owes much of the uncertainty and imperfection with which it has been reproached.

§ 4. Patients should faithfully and unreservedly communicate to their physicians the supposed cause of their disease. This is the more important, as many diseases of mental origin stimulate those depending on external causes, and yet are only to be cured by ministering to the mind diseased. A patient should never be afraid of thus making his physician his friend and adviser. He should always bear in mind that a medical man is under the strongest obligations of secrecy. Even the female sex

should never allow feelings of shame or delicacy to prevent their disclosing the seat, symptoms, and causes of complaints peculiar to them. However commendable a modest reserve may be in the common occurrences of life, its strict observance in medicine is often attended with the most serious consequences, and the patient may sink under a painful and loathsome disease, which might have been readily prevented had timely intimation been given to the physician.

§ 5. A patient should never weary his physician with a tedious detail of events or matters not appertaining to his disease. Even as relates to his actual sypmtoms he will convey much more real information by giving clear answers to interrogatories, than by the most minute account of his own framing. Neither should he obtrude upon his physician the details of his business nor the history of his family concerns.

§ 6. The obedience of a patient to the prescriptions of his physician should be prompt and implicit. He should never permit his own crude opinions as to their fitness to influence his attention to them. A failure in one particular may render an otherwise judicious treatment dangerous, and even fatal. This remark is equally applicable to diet, drink, and exercise. As patients become convalescent, they are very apt to suppose that the rules prescribed for them may be disregarded; and the consequence, but too often, is a relapse. Patients should never allow themselves to be persuaded to take any medicine whatever that may be recommended to them by the self-constituted doctors and doctresses who are so frequently met with, and who pretend to possess infallible remedies for the cure of every disease. However simple some of their prescriptions may appear to be, it often happens that they are productive of much mischief, and in all cases they are

injurious, by contravening the plan of treatment adopted by the physician.

§ 7. A patient should, if possible, avoid even the *friendly visits of a physician* who is not attending him, and when he does receive them, he should never converse on the subject of his disease, as an observation may be made, without any intention of interference, which may destroy his confidence in the course he is pursuing, and induce him to neglect the directions prescribed to him. A patient should never send for a consulting physician without the express consent of his own medical attendant. It is of great importance that physicians should act in concert; for, although their modes of treatment may be attended with equal success when employed singly, yet conjointly, they are very likely to be productive of disastrous results.

§ 8. When a patient wishes to dismiss his physician, justice and common courtesy require that he should declare his reasons for so doing.

§ 9. Patients should always, when practicable, send for their physicians in the morning, before his usual hour of going out; for, by being early aware of the visits he has to pay during the day, the physician is able to proportion his time in such a manner as to prevent an interference of engagements. Patients should also avoid calling on their medical advisers unnecessarily during the hours devoted to meals or sleep. They should always be in readiness to receive the visits of their physician, as the detention of a few minutes is often of serious inconvenience to him.

§ 10. A patient should, after his recovery, entertain a just and enduring sense of the value of the services rendered him by his physician; for these are of such a character, that no mere pecuniary acknowledgment can repay or cancel them.

CHAPTER II.

OF THE DUTIES OF PHYSICIANS TO EACH OTHER, AND TO THE PROFESSION AT LARGE.

ARTICLE I.

DUTIES FOR THE SUPPORT OF PROFESSIONAL CHARACTER.

§ 1. Every individual, on entering the profession, as he becomes thereby entitled to all its privileges and immunities, incurs an obligation to exert his best abilities to maintain its dignity and honor, to exalt its standing, and to extend the bounds of its usefulness. He should, therefore, observe strictly such laws as are instituted for the government of its members; should avoid all contumelious or sarcastic remarks relative to the faculty as a body; and while, by unwearied diligence, he resorts to every honorable means of enriching the science, he should entertain a due respect for his seniors, who have, by their labors, brought it to the elevated condition in which he finds it.

§ 2. There is no profession from the members of which greater purity of character and a higher standard of moral excellence are required than the medical; and to attain such eminence is a duty every physician owes alike to his profession and to his patients. It is due to the latter, as without it he cannot command their respect and confidence; and to both, because no scientific attainments can compensate for the want of correct moral principles. It is also incumbent upon the faculty to be temperate in all things, for the practice of physic requires the unremitting exercise of a clear and vigorous understanding; and in emergencies, for which no professional man should be unprepared, a steady hand, an acute eye, and an un-

clouded head may be essential to the well-being and even to the life of a fellow creature.

§ 3. It is derogatory to the dignity of the profession to resort to public advertisements or private cards, or handbills, inviting the attention of individuals affected with particular diseases—publicly offering advice and medicine to the poor gratis, or promising radical cures; or to publish cases or operations in the daily prints, or to suffer such publications to be made; to invite laymen to be present at operations, to boast of cures and remedies, to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practices of empirics, and are highly reprehensible in a regular physician.

§ 4. Equally derogatory to professional character is it for a physician to hold a patent for any surgical instrument or medicine; or to dispense a secret *nostrum*, whether it be the composition or exclusive property of himself or others. For if such *nostrum* be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality; and if mystery alone can give it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of patent or secret medicines, or in any way to promote the use of them.

ARTICLE II.

PROFESSIONAL SERVICES OF PHYSICIANS TO EACH OTHER.

§ 1. All practitioners of medicine, their wives and their children, while under the paternal care, are entitled to the gratuitous services of any one or more of the faculty residing near them, whose assistance may be desired. A physician afflicted with disease is usually an incompetent judge of his own case, and the natural anxiety and

solicitude which he experiences at the sickness of a wife, a child, or any one who, by the ties of consanguinity, is rendered peculiarly dear to him, tend to obscure his judgment, and produce timidity and irresolution in his practice. Under such circumstances medical men are peculiarly dependent upon each other, and kind offices and professional aid should always be cheerfully and gratuitously afforded. Visits ought not, however, to be obtruded officiously, as such unasked civility may give rise to embarrassment, or interfere with that choice on which confidence depends. But, if a distant member of the family, whose circumstances are affluent, requests attendance, and an *honorarium* be offered, it should not be declined; for no pecuniary obligation ought to be imposed which the party receiving it would wish not to incur.

ARTICLE III.

OF THE DUTIES OF PHYSICIANS AS RESPECTS VICARIOUS OFFICES.

§ 1. The affairs of life, the pursuit of health, and the various accidents and contingencies to which a medical man is peculiarly exposed, sometimes require him temporarily to withdraw from his duties to his patients and to request some of his professional brethren to officiate for him. Compliance with this request is an act of courtesy, which should always be performed with the utmost consideration for the interest and character of the family physician, and when exercised for a short period all the pecuniary obligations for such service should be awarded to him. But if a member of the profession neglects his business in quest of pleasure and amusement he cannot be considered as entitled to the advantages of the frequent and long-continued exercise of this fraternal courtesy without awarding to the physician who officiates

the fees arising from the discharge of his professional duties.

In obstetrical and important surgical cases, which give rise to unusual fatigue, anxiety and responsibility, it is just that the fees accruing therefrom should be awarded to the physician who officiates.

ARTICLE IV.

OF THE DUTIES OF PHYSICIANS IN REGARD TO CONSULTATIONS.

§ 1. A regular medical education furnishes the only presumptive evidence of professional abilities and acquirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless, as in consultations the good of the patient is the sole object in view, and this is often dependent on personal confidence, no intelligent, regular practitioner, who has a license to practice from some medical board of known and acknowledged respectability, recognized by the American Medical Association, and who is in good moral and professional standing in the place in which he resides, should be fastidiously excluded from fellowship, or his aid refused in consultation, when it is requested by the patient. But no one can be considered as a regular practitioner, or a fit associate in consultation, whose practice is based on an exclusive dogma to the rejection of the accumulated experience of the profession, and of the aids actually furnished by anatomy, physiology, pathology and organic chemistry.

§ 2. In consultations no rivalship or jealousy should be indulged. Candor, probity, and all due respect should be exercised toward the physician having charge of the case.

§ 3. In consultations the attending physician should be the first to propose the necessary questions to the sick; after which the consulting physician should have the opportu-

nity to make such further inquiries of the patient as may be necessary to satisfy him of the true character of the case. Both physicians should then retire to a private place for deliberation, and the one first in attendance should communicate the directions agreed upon to the patient or his friends, as well as any opinions which it may be thought proper to express, but no statement or discussion of it should take place before the patient or his friends, except in the presence of all the faculty attending, and by their common consent; and no *opinions or prognostications* should be delivered which are not the result of previous deliberations and concurrence.

§ 4. In consultation, the physician in attendance should deliver his opinion first; and when there are several consulting, they should deliver their opinions in the order in which they have been called in. No decision, however, should restrain the attending physician from making such variations in the mode of treatment as any subsequent unexpected change in the character of the case may demand. But such variation and the reason for it ought to be carefully detailed at the next meeting in consultation. The same privilege belongs also to the consulting physician if he is sent for in an emergency, when the regular attendant is out of the way, and similar explanations must be made by him at the next consultation.

§ 5. The utmost punctuality should be observed in the visits of physicians when they are to hold consultations together; and this is generally practicable, for society has been considerate enough to allow the plea of a professional engagement to take precedence of all others, and to be an ample reason for the relinquishment of any present occupation; but, as a professional engagement may sometimes interfere and delay one of the parties, the physician who first arrives should wait for his associate a reasonable period, after which the consultation should be con-

sidered as postponed to a new appointment. If it be the attending physician who is present, he will, of course, see the patient and prescribe, but if it be the consulting one, he should retire, except in case of emergency, or when he has been called from a considerable distance, in which latter case he may examine the patient and give his opinion in *writing* and *under seal*, to be delivered to his associate.

§ 6. In consultations, theoretical discussions should be avoided, as occasioning perplexity and loss of time, for there may be much diversity of opinion concerning speculative points, with perfect agreement in those modes of practice which are founded, not on hypothesis, but on experience and observation.

§ 7. All discussions in consultation should be held as secret and confidential. Neither by words nor manner should any of the parties to a consultation assert or insinuate that any part of the treatment pursued did not receive his assent. The responsibility must be equally divided between the medical attendants. They must equally share the credit of success, as well as the blame of failure.

§ 8. Should an irreconcilable diversity of opinion occur when several physicians are called upon to consult together, the opinion of the majority should be considered decisive; but if the number be equal on each side, then the decision should rest with the attending physician. It may, moreover, sometimes happen that two physicians cannot agree in their views of the nature of a case and the treatment to be pursued. This is a circumstance much to be deplored, and should always be avoided, if possible, by mutual concessions as far as they can be justified by a conscientious regard for the dictates of judgment; but in the event of its occurrence, a third physician should, if practicable, be called to act as um-

pire; and if circumstances prevent the adoption of this course, it must be left to the patient to select the physician in whom he is most willing to confide; but as every physician relies upon the rectitude of his judgment, he should, when left in the minority, politely and consistently retire from further deliberation in the consultation, or participation in the management of the case.

§ 9. As circumstances sometimes occur to render a *special consultation* desirable, when the continued attendance of the physicians might be objectionable to the patient, the member of the faculty whose assistance is required in such cases should sedulously guard all future unsolicited attendance. As such consultations require an extraordinary portion both of time and attention, at least a double *honorarium* may be reasonably expected.

§ 10. A physician who is called upon to consult should observe the most honorable and scrupulous regard for the character and standing of the practitioner in attendance; the practice of the latter, if necessary, should be justified as far as it can be consistently with a conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in him or affect his reputation. The consulting physician should also carefully refrain from any of those extraordinary attentions or assiduities which are too often practiced by the dishonest for the base purpose of gaining applause, or ingratiating themselves into the favor of families and individuals.

ARTICLE V.

DUTIES OF PHYSICIANS IN CASE OF INTERFERENCE.

§ 1. Medicine is a liberal profession, and those admitted into its ranks should found their expectations of practice upon the extent of their qualification—not on intrigue or artifice.

§ 2. A physician, in his intercourse with a patient under the care of another practitioner, should observe the strictest caution and reserve. No meddling inquiries should be made—no disingenuous hints given relative to the nature and treatment of his disorder; nor any course of conduct pursued that may directly or indirectly tend to diminish the trust reposed in the physician employed.

§ 3. The same circumspection and reserve should be observed when, from motives of business or friendship, a physician is prompted to visit an individual who is under the direction of another practitioner. Indeed, such visits should be avoided, except under peculiar circumstances; and when they are made, no particular inquiries should be instituted relative to the nature of the disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

§ 4. A physician ought not to take charge of, or prescribe for, a patient who has recently been under the care of another member of the faculty in the same illness, except in cases of sudden emergency; or in consultation with the physician previously in attendance, or when the latter has relinquished the case, or been regularly notified that his services are no longer desired. Under such circumstances no unjust or illiberal insinuations should be thrown out in relation to the conduct or practice previously pursued, which should be justified as far as candor and regard for truth and probity will permit; for it often happens that patients become dissatisfied when they do not experience immediate relief, and, as many diseases are naturally protracted, the want of success in the first stage of treatment affords no evidence of lack of professional knowledge or skill.

§ 5. When a physician is called to an urgent case because the family attendant is not at hand, he ought, unless his assistance in consultation be desired, to resign

the care of the patient to the latter immediately on his arrival.

§ 6. It often happens, in cases of sudden illness or of recent accident or injuries, owing to the alarm and anxiety of friends, that a number of physicians are simultaneously sent for. Under these circumstances courtesy should assign the patient to the first who arrives, who should select from those present any additional assistance that he may deem necessary. In all such cases, however, the practitioner who officiates should request the family physician, if there be one, to be called, and, unless his further attendance is requested, should resign the case to the latter upon his arrival.

§ 7. When a physician is called to the patient of another practitioner, in consequence of the sickness or absence of the latter, he ought, on the return or recovery of the regular attendant, and with the consent of the patient, to surrender the case.

(The expression, "patient of another practitioner," is understood to mean a patient who may have been under the charge of another practitioner at the time of the attack of sickness, or departure from home of the latter, or who may have called for his attendance during his absence or sickness, or in any manner given it to be understood that he regarded the said physician as his regular medical attendant.)

§ 8. A physician, when visiting a sick person in the country, may be desired to see a neighboring patient who is under the regular direction of another physician, in consequence of some sudden change or aggravation of symptoms. The conduct to be pursued on such an occasion is to give advice adapted to present circumstances; to interfere no further than is absolutely necessary with the general plan of the treatment; to assume no further direction, unless it be expressly desired; and, in this last

case, to request an immediate consultation with the practitioner previously employed.

§ 9. A wealthy physician should not give advice *gratis* to the affluent; because his doing so is an injury to his professional brethren. The office of physician can never be supported as an exclusively beneficient one; and it is defrauding, in some degree, the common funds for its support when fees are dispensed with which might justly be claimed.

§ 10. When a physician who has been engaged to attend a case of midwifery is absent, and another is sent for, if delivery is accomplished during the attendance of the latter, he is entitled to the fee, but should resign the patient to the practitioner first engaged.

ARTICLE VI.

OF DIFFERENCES BETWEEN PHYSICIANS.

§ 1. Diversity of opinion and opposition of interest may, in the medical, as in other professions, sometimes occasion controversy, and even contention. Whenever such cases unfortunately occur, and cannot be immediately terminated, they should be referred to the arbitration of a sufficient number of physicians, or a *court-medical*.

§ 2. As a peculiar reserve must be maintained by physicians towards the public in regard to professional matters, and as there exists numerous points in medical ethics and etiquette through which the feelings of medical men may be painfully assailed in their intercourse with each other, and which cannot be understood or appreciated by general society, neither the subject-matter of such differences nor the adjudication of arbitrators should be made public, as publicity in a case of this nature may be personally injurious to the individuals

concerned; and can hardly fail to bring discredit on the faculty.

ARTICLE VII.

OF PECUNIARY ACKNOWLEDGMENTS.

§ 1. Some general rules should be adopted by the faculty in every town or district, relative to pecuniary acknowledgments from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

CHAPTER III.

OF THE DUTIES OF THE PROFESSION TO THE PUBLIC, AND OF THE OBLIGATIONS OF THE PUBLIC TO THE PROFESSION.

ARTICLE I.

DUTIES OF THE PROFESSION TO THE PUBLIC.

§ 1. As good citizens, it is the duty of physicians to be ever vigilant for the welfare of the community, and to bear their part in sustaining its institutions and burdens; they should also be ever ready to give counsel to the public in relation to matters especially appertaining to their profession, as on subjects of medical police, public hygiene, and legal medicine. It is their province to enlighten the public in regard to quarantine regulations, the location, arrangement, and dietaries of hospitals, asylums, schools, prisons, and similar institutions; in relation to the medical police of towns, as drainage, ventilation, etc., and in regard to measures for the prevention of epidemic and contagious diseases; and when pestilence prevails, it is their duty to face the danger, and to continue their labors for the alleviation of the suffering, even at the jeopardy of their own lives.

§ 2. Medical men should also be always ready, when called on by the legally constituted authorities, to enlighten coroners' inquests and courts of justice on subjects strictly medical, such as involve questions relating to sanity, legitimacy, murder by poison or other violent means, and in regard to the various other subjects embraced in the science of Medical Jurisprudence. But in these cases, and especially where they are required to make a *post-mortem* examination, it is just, in consequence of the time, labor and skill required, and the responsi-

bility and risk they incur, that the public should award them a proper *honorarium*.

§ 3. There is no profession by the members of which eleemosynary services are more liberally dispensed than the medical, but justice requires that some limit should be placed to the performance of such good offices. Poverty, professional brotherhood, and certain of the public duties referred to in the first section of this article should also be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public, or by rich individuals, societies for mutual benefit, for the insurance of lives or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege. Nor can it be justly expected of physicians to furnish certificates of inability to serve on juries, to perform militia duty, or to testify to the state of health of persons wishing to insure their lives, obtain pensions, or the like, without pecuniary acknowledgment. But to individuals in indigent circumstances, such professional services should always be cheerfully and freely accorded.

§ 4. It is the duty of physicians who are frequent witnesses of the enormities committed by quackery and the injury to health, and even destruction of life, caused by the use of quack medicines, to enlighten the public on these subjects, to expose the injuries sustained by the unwary from the devices and pretensions of artful empirics and impostors. Physicians ought to use all the influence which they may possess, as professors in Colleges of Pharmacy, and by exercising their option in regard to the shops to which their prescriptions shall be sent, to discourage druggists and apothecaries from vending quack or secret medicines, or from being in any way engaged in their manufacture and sale.

ARTICLE II.

OBLIGATIONS OF THE PUBLIC TO PHYSICIANS.

§ 1. The benefits accruing to the public, directly or indirectly, from the active and unwearied beneficence of the profession, are so numerous and important, that physicians are justly entitled to the utmost consideration and respect from the community. The public ought likewise to entertain a just appreciation of medical qualifications; to make a proper discrimination between true science and the assumption of ignorance and empiricism—to afford every encouragement and facility for the acquisition of medical education—and no longer to allow the statute books to exhibit the anomaly of exacting knowledge from physicians, under a liability to heavy penalties, and of making them obnoxious to punishment for resorting to the only means of obtaining it.

Resolved, That this Association recognize Specialties as proper and legitimate fields of practice.

Resolved, That Specialties shall be governed by the same rules of professional etiquette as have been laid down for general practitioners.

Resolved, That it shall not be proper for the Specialists publicly to advertise themselves as such, or assume any title not specially granted by a regularly chartered college.

ROLL OF MEMBERS

OF THE

Medical Association of Georgia.

1897.

ARRANGED ALPHABETICALLY.

ABBREVIATIONS—P., President; V.-P., Vice-President; S., Secretary; C. S., Corresponding Secretary; T., Treasurer; O., Orator; C., Censor; indicating the offices the members hold or have held.

Members are particularly requested to notify the Secretary promptly on making any changes in their post-offices.

The Secretary will esteem it a favor if any member will write him at once on noticing any inaccuracy or omission in the roll.

Name.	Post-office.	County.	Admitted.
Adair, W. J	Rockmart	Polk	1897
Adair, R. E.	Taylorsville	Bartow	1897
Adams, Wm. E.	Greensboro	Greene	1891
Aikin, W. F.	Savannah.	Chatham	1895
Alexander, G. L	Forsyth	Monroe	1894
Allen, H. D	Milledgeville	Baldwin	1891
Allen, Joseph Eve	Augusta	Richmond	1895
Amason, C. T.	Nielly	Telfair	1897
Amster, L	Atlanta.	Fulton	1894
Anderson, Newt	Eudora.	Jasper	1894
Anthony, E. R. (V.-P.)	Griffin	Spalding.	1887
Avant, A. L. R.	Patterson.	Pierce	1895
Avary, Arch	Atlanta	Fulton	1887
Avary, J. C	Atlanta	Fulton	1889
Bacon, W. W	Albany.	Dougherty	1890
Bailey, J. W	Gainesville.	Hall.	1861
Baird, Jas. B. (S., O.)	Atlanta	Fulton	1872
Baker, E. L	Odessadale.	Meriwether	1897
Baldwin, M. A	Cuthbert.	Randolph.	1890

Name.	Post-office.	County.	Admitted.
Barnum, R. E. L	Richland	Stewart	1892
Barron, R. B. (V.-P.)	Macon	Bibb	1884
Battey, H. H.	Rome	Floyd	1882
Battey, W. W	Augusta	Richmond	1896
Bedingfield, S. T	Union	Stewart	1894
Bell, A. K	Madison	Morgan	1889
Belt, L. J	Herndon	Burke	1888
Benedict, S. C. (o.)	Athens	Clarke	1883
Benson, Chas. F	Atlanta	Fulton	1897
Bivins, T. F	Vienna	Dooly	1897
Bizzell, B. W.	Atlanta	Fulton	1894
Black, A. H	Thomaston	Upson	1893
Blain, Arthur C	Macon	Bibb	1890
Blalock, W. J	Atlanta	Fulton	1894
Blanton, G. W.	Brunswick	Glynn	1893
Bloomfield, Jas. C	Athens	Clarke	1890
Bosworth, Don B.	Atlanta	Fulton	1894
Bowers, F. S	Atlanta	Fulton	1897
Boyd, Montague L. (V.-P.)	Savannah	Chatham	1889
Boyd, A. F.	Iric	Bullock	1891
Boyd, Edward	Atlanta	Fulton	1897
Bozeman, E. K.	Forsyth	Monroe	1892
Bozett, A. S	Friendship	Sumter	1897
Bridges, B. L.	Ellavil e	Schley	1897
Brigham, J. C	Girard	Burke	1891
Brown, H. A.	Fort Valley	Houston	1891
Brown, M. S.	Fort Valley	Houston	1894
Bruce, W. W	Thomasville	Thomas	1881
Bryan, J. A	Gillsville	Hall	1894
Bryans, R. G	Jackson	Henry	1890
Bryant, W. J.	Summerville	Chattooga	1892
Buford, O. H.	Cartersville	Bartow	1891
Bullard, W. M	Monticello	Jasper	1897
Bullard, J. H.	Machen	Jasper	1897
Burdett, J. R.	Tennille	Washington	1889
Burford, R. E. L	Brunswick	Glynn	1890
Burns, J. K	Clarksville	Habersham	1897
Burt, A. Moody	Sparta	Hancock	1896
Bush, E. B.	Colquitt	Milner	1895
Bush, O. B	Colquitt	Miller	1897
Butler, P. M	Atlanta	Fulton	1894
Butts, R. M	Gordon	Wilkinson	1892
Calhoun, A. T.	Cartersville	Bartow	1894

Name.	Post-office.	County.	Admitted.
Calhoun, A. W. (V.-P., C., P.)	Atlanta	Fulton	1874
Callaway, Enoch	LaGrange	Troup	1895
Callaway, J. A.	Milledgeville	Baldwin	1882
Campbell, J. L.	Atlanta	Fulton	1894
Carson, M. F.	Griffin	Spalding	1897
Carswell, N. T	Irwinton	Wilkinson	1897
Cason, E. A	LaGrange	Troup	1897
Cato, F. L	DeSoto	Sumter	1893
Cato, R. E	Americus	Sumter	1893
Champion, W. L	Atlanta	Fulton	1894
Chapman, Geo. L	Dublin	Laurens	1897
Chappell, Guy	Bronwood	Terrell	1897
Chason, J. D	Iron City	Decatur	1895
Chason, Thomas	Donaldsonville	Decatur	1895
Cheatham, W. B	Dawson	Terrell	1880
Childs, J. A	Atlanta	Fulton	1894
Clark, B. J.	Barnesville	Pike	1896
Clark, M. A	Barnesville	Pike	1893
Clark, P. S.	Darien	McIntosh	1890
Coile, F. W	Winterville	Oglethorpe	1897
Coile, J. G	Monticello	Jasper	1897
Cole, J. F	Carrollton	Carroll	1884
Coleman, Thos. D	Augusta	Richmond	1891
Coleman, J. D	Henderson	Houston	1897
Collins, Katherine R	Atlanta	Fulton	1894
Comas, P. H	Baxley	Appling	1889
Connelly, E. L. (C.)	Atlanta	Fulton	1860
Cooper, Hunter P	Atlanta	Fulton	1894
Corson, E. R.	Savannah	Chatham	1895
Cortelyou, P. R. (V.-P.)	Marietta	Cobb	1887
Cosby, F. L.	Box Spring	Talbot	1897
Cotter, R. O	Macon	Bibb	1882
Coursey, W. D	Vidalia	Montgomery	1894
Cox, R. P	Rome	Floyd	1891
Cox, W. J	Barnesville	Pike	1894
Crawford, A. H.	Abbeville	Wilcox	1893
Crawford, J. M.	Atlanta	Fulton	1888
Crawford, O. G.	Sasser	Terrell	1893
Crowley, J. G	Milledgeville	Baldwin	1893
Crowe, W. A	Atlanta	Fulton	1892
Crozier, J. H.	Cedar Springs	Early	1889
Culpepper, W. F.	Senoia	Coweta	1892
Currie, M. L.	Ailey	Montgomery	1890
Crumley, W. F.	Oglethorpe	Macon	1892

Name.	Post-office.	County.	Admitted.
Danforth, A. R.	Atlanta	Fulton	1894
Darby, J. I.	Americus.	Sumter	1893
Davidson, A. A	Augusta..	Richmond	1896
Davidson, A. C.	Sharon.	Taliaferro	1887
Davis, E. C.	Atlanta	Fulton.	1894
Davis, Jeff.	Toccoa.	Habersham	1893
Davis, T. B.	Newnan .	Coweta	1892
Davis, Wm. L.	Albany.	Dougherty.	1893
Dean, J. G	Dawson	Terrell.	1889
Dean, W. L	Woodstock.	Cherokee	1894
Denson, E. J.	Allenton	Wilkinson	1897
Divine, K. C	Atlanta	Fulton .	1882
Doster, B. R. (V.-P.).	Blakely	Early.	1873
Doster, B. R., Jr	Blakely	Early.	1896
Doughty, Henry Campbell	Augusta .	Richmond .	1896
Doughty, Wm. H. (C.)	Augusta .	Richmond .	1857
Doughty, Wm. H., Jr. (V-P.)	Augusta.	Richmond .	1880
Douglass, J. E	Cuthbert.	Randolph	1889
Douglass, J. B.	Talbotton.	Talbot	1897
Dozier, R. T.	Sasser .	Terrell .	1893
Drake, C. M	Atlanta	Fulton	1897
Drewry, T. E.	Griffin .	Spalding	1892
Drewry, N. B.	Griffin .	Spalding .	1897
Dudley, M. J.	Sonoraville.	Gordon.	1880
Dugas, Geo. C.	Augusta	Richmond	1880
Duggan, J. H.	Stephensville..	Wilkinson .	1884
Duncan, J. W	Atlanta	Fulton	1883
Duncan, Wm.	Savannah.	Chatham	1868
Dunwoody, J. A. (V.-P.)	Brunswick .	Glynn .	1888
DuPree, O. S	Danville	Twiggs	1897
Earnest, J. G.	Atlanta	Fulton.	1882
Eberhart, J. W.	Hartwell.	Hart.	1897
Edenfield, W. N.	Pinehurst	Dooly	1897
Elkin, W. S.	Atlanta	Fulton.	1882
Elliott, W. H. (P.)	Savannah.	Chatham.	1884
Ellis, S. T.	River.	Johnson	1896
Evans, J. H.	Davisborough.	Washington	1897
Eve, Robert C.	Augusta	Richmond.	1894
Farmer, J. L.	Miller	Screven	1897
Felder, L. A.	Atlanta	Fulton.	1894
Field, J. C.	Oglethorpe.	Macon	1889
Fitts, W. L	Carrollton	Carroll.	1890
Fitts, P. W.	Mountville.	Troup	1897

Name.	Post-office.	County.	Admitted.
Folks, G. P.	Waycross	Ware	1890
Fort, R. W.	Atlanta	Fulton	1896
Foster, Eugene (V.-P., C., P.)	Augusta	Richmond	1875
Frederick, H. F.	Govania	Houston	1897
Fulcher, M. O.	Waynesboro	Burke	1895
Gann, Wm. F.	Columbus	Muscogee	1891
Gantier, W. T.	Columbus	Muscogee.	1892
Garland, J. T.	Hillsboro	Jasper	1889
Garlington, T. R.	Rome	Floyd	1893
Gaston, J. McF.	Atlanta	Fulton	1884
Gaston, J. McF., Jr.	Atlanta	Fulton	1894
Gaulden, Samuel S.	Quitman	Brooks	1892
Gerdine, John (C., V.-P.)	Athens.	Clarke	1882
Gheesling, J. H.	Greensboro.	Greene.	1891
Gill, H. L.	Columbus	Muscogee	1894
Gillespie, J. W.	Albany	Dougherty	1897
Gilmer, Wm. B.	Macon	Bibb	1893
Goethe, J. E.	Blackshear.	Pierce	1897
Goldin, W. F.	Draketown	Haralson.	1894
Goldsmith, W. S.	Atlanta.	Fulton	1893
Goneke, L. C.	Dawson.	Terrell	1897
Goodrich, E. C. (T.)	Augusta	Richmond	1876
Googe, W. R.	Abbeville	Wilcox.	1892
Goolsby, R. C.	Juliette.	Monroe.	1891
Goss, I. H.	Athens.	Clarke	1877
Grandy, L. B.	Atlanta.	Fulton.	1893
Green, C. C.	Atlanta.	Fulton.	1887
Green, S. H.	Oakdale	Fulton	1892
Greenwood, T. M.	Mineral Bluff	Fannin.	1894
Griffin, W. C.	Cartersville	Bartow	1897
Griffith, Jas. I.	Danielsville.	Madison.	1897
Grimes, Geo. J.	Columbus	Muscogee	1872
Guian, J. A.	Conyers	Rockdale.	1896
Hagan, Hugh.	Atlanta	Fulton	1892
Halliday, A. C.	Athens.	Clarke	1897
Hamilton, C.	Rome	Floyd	1894
Hammond, R. A.	Logansville.	Walton.	1894
Hancock, Thos. H.	Atlanta.	Fulton.	1896
Harbin, R. M.	Rome	Floyd	1894
Hardman, L. G.	Harmony Grove	Jackson	1877
Hardman, W. B.	Harmony Grove	Jackson	1892
Hardon, Virgil O. (O.)	Atlanta	Fulton.	1886
Harrison, W. H., Jr.	Augusta	Richmond	1886

Name.	Post-office.	County.	Admitted.
Harrison, E. S.	Thomson.	McDuffie.	1897
Harris, E. A.	Midville.	Burke.	1893
Harris, R. B.	Savannah.	Chatham.	1885
Hawkins, A. M. F.	Ball Ground.	Cherokee.	1891
Hawes, A. S.	Elberton.	Elbert.	1895
Head, J. M.	Zebulon.	Pike.	1883
Henderson, J. R.	Sun Hill.	Washington.	1884
Herman, J. D.	Eastman.	Dodge.	1884
Hicks, Chas. C. (c.).	Dublin.	Laurens.	1884
Hiers, J. L.	Savannah.	Chatham.	1895
Hill, J. J.	Washington.	Wilkes.	1880
Hillsman, P. L.	Albany.	Dougherty.	1871
Hobbs, A. G.	Atlanta.	Fulton.	1882
Holliday, W. Z.	Augusta.	Richmond.	1884
Hollis, T. B.	Bolingbroke.	Monroe.	1897
Holmes, J. B. S. (v.-p., p.).	Atlanta.	Fulton.	1872
Holt, W. F. (v.-p., p.).	Macon.	Bibb.	1867
Hood, J. W.	Atlanta.	Fulton.	1894
Hopkins, J. G. (c.)	Thomasville.	Thomas.	1890
Horine, Geo.	Americus.	Sumter.	1893
Horrocks, J. Marion.	Thomasville.	Thomas.	1893
Horsley, J. S.	West Point.	Troup.	1894
Horsley, J. S., Jr.	West Point.	Troup.	1896
Howell, Dan H. (s.)	Atlanta.	Fulton.	1878
Hubbard, T. V.	Atlanta.	Fulton.	1896
Hudson, P. L.	Cochran.	Pulaski.	1896
Humphries, J. R.	Acworth.	Cobb.	1876
Humphries, W. C.	Acworth.	Cobb.	1890
Hurt, Chas. D.	Atlanta.	Fulton.	1890
Hutchins, M. B.	Atlanta.	Fulton.	1892
Jackson, Max.	Macon.	Bibb.	1897
Jelks, E. L.	Hawkinsville.	Pulaski.	1896
Jelks, N. P.	Hawkinsville.	Pulaski.	1882
Johnson, J. C.	Atlanta.	Fulton.	1894
Johnson, James C.	Macon.	Bibb.	1875
Johnson, L. M.	Rowland.	Upson.	1893
Johnson, W. A.	Rome.	Floyd.	1897
Joiner, B. L.	Andersonville.	Sumter.	1897
Joiner, W. W.	Hawkinsville.	Pulaski.	1897
Jones, Louis H.	Atlanta.	Fulton.	1890
Jones, L. M.	Milledgeville.	Baldwin.	1880
Jones, T. S.	Jeffersonville.	Twiggs.	1893
Jowers, Clebe.	Americus.	Sumter.	1897

Name.	Post-office.	County.	Admitted.
Keaton, P. H	Damascus	Early	1889
Kelley, T. J	Indian Spring	Butts	1884
Kelly, J. M	Griffin	Spalding	1885
Kendrick, W. S. (o.)	Atlanta	Fulton	1874
Kenyon, O. T	Weston	Webster	1892
Kime, R. R	Atlanta	Fulton	1892
King, J. C	Newnan	Coweta	1896
Lancaster, J. F	Forsyth	Monroe	1884
Lane, L. P	Stillmore	Emanuel	1895
Lanier, Sidney J	Savannah	Chatham	1890
Latimer, J. H., Jr	Hazlehurst	Appling	1897
Lawrence, G. A	Haddock	Jones	1897
Lee, Walter W	Gordon	Wilkinson	1897
LeHardy, J. C., (T., V.-P.)	Savannah	Chatham	1868
Lewis, F. L	Camilla	Mitchell	1897
Lockhardt, V. D	Mayesville	Banks	1891
Love, T. D	Atlanta	Fulton	1887
Lovorn, J. L	Bowden	Carroll	1894
Lovorn, R. M	Bowden	Carroll	1896
Lyle, W. C	Augusta	Richmond	1896
McArthur, Thos. J	Unadilla	Dooly	1897
McCurry, J. L	Hartwell	Hart	1897
McDaniel, J. L	Atlanta	Fulton	1896
McDonald, C. M	Leesburg	Lee	1892
McDuffie, Jas. H	Columbus	Muscogee	1893
McHatton, H. (C., V.-P.)	Macon	Bibb	1883
McIntosh, P. A	Thomasville	Thomas	1893
McIntosh, T. M	Thomasville	Thomas	1874
McKinnon, J. K	White Oak	Camden	1895
McKown, J. A	Jonesboro	Clayton	1891
McKown, T. D	Chickamauga	Walker	1887
McLean, J. L	Birdford	Tatnall	1897
McLeod, R. D	Lyons	Montgomery	1893
McMaster, D. E	Tennille	Washington	1894
McMaster, H. B. (C.)	Waynesboro	Burke	1888
McMath, J. F	Andersonville	Sumter	1897
McRae, A. B	Seville	Wilcox	1893
McRae, F. W	Atlanta	Fulton	1887
Mack, Alexander	Hawkinsville	Pulaski	1897
Mallory, R. A	Concord	Pike	1893
Maloy, John K	Milan	Telfair	1890
Maloy, W. C	Rhine	Dodge	1893
Malone, J. D	Marietta	Cobb	1891

Name.	Post-office.	County.	Admitted.
Manderville, J. T.	Cuthbert.	Randolph	1894
Mangham, J. E.	Reynolds.	Taylor	1897
Martin, J. D	Savannah	Chatham.	1894
Mathis, A	Macon	Bibb	1872
Matthews, S. M.	Quitman.	Brooks.	1890
Matthews, W. J	Tignall.	Wilkes.	1892
May, W. F.	Savannah.	Chatham.	1894
Merritt, Thos. M.	Calvary	Decatur	1895
Miller, G. T. (V.-P.).	Americus	Sumter.	1892
Miller, R. L	Hephzibah.	Richmond	1891
Mitchell, T. Emerson.	Columbus	Muscogee.	1896
Mobley, H. A.	Byronville	Dooly	1891
Montgomery, R. O	Greensboro.	Greene	1897
Montgomery, Chas. J.	Augusta	Richmond	1895
Mooney, H. R	Hagan.	Bryan	1891
Moore, K. P. (V.-P., P., S., O., T.)	Macon.	Bibb.	1871
Moore, J. M	Macon	Bibb	1897
Moreland, A C.	Forsyth	Monroe	1892
Moran, C. A	Atlanta	Fulton.	1895
Morgan, J. B. (V.-P., P.)	Augusta	Richmond	1891
Moss, W. Hosea	Monroe.	Walton	1897
Mulligan, G. W., (V.-P., P).	Washington	Wilkes.	1883
Munro, Henry S	Americus.	Sumter.	1893
Neal, J. W.	Scotland.	Telfair.	1892
Nichols, D. N.	Laston.	Bulloch	1891
Nicolson, Wm. Perrin.	Atlanta.	Fulton.	1883
Niles, Geo. M	Marshallville.	Macon.	1893
Nisbet, D. B.	Eatonton.	Putnam	1894
Noble, G. H. (P.)	Atlana.	Fulton.	1883
Nunn, R. J. (C., V.-P., P.)	Savannah	Chatham.	1867
O'Daniel. Mark H. (O., C., V.-P.)	Macon.	Bibb.	1882
O'Daniel, William (T., P.)	Bullard.	Twiggs.	1870
O'Daniel, W. A. (O.)	Milledgeville.	Baldwin	1886
Oliver, A. S	Elberton.	Elbert	1897
Olmstead, J. C	Atlanta	Fulton.	1886
Owens, W. W	Savannah	Chatham	1891
Paige, John D	Savannah	Chatham.	1892
Patten, W. L	Milltown.	Berrien.	1895
Patterson, F. D.	Cuthbert.	Randolph	1892
Patterson, J. C	Milledgeville.	Baldwin	1894
Parks, W. B	Atlanta	Fulton.	1882
Payne, George F	Atlanta	Fulton.	1894

Name.	Post-office.	County.	Admitted.
Peete, C. H	Macon	Bibb	1893
Pendergrass, J. B.	Jefferson	Jackson	1883
Perdue, H.	Barnesville	Pike	1889
Peters, A. B	Moultrie	Colquitt	1897
Peterson, N.	Tifton	Berrien	1897
Petrie, C. B	Athens	Clarke	1894
Phillips, S. Latimer.	Savannah	Chatham.	1890
Pla, J. M.	Atlanta	Fulton	1897
Ponder, W. P.	Forsyth	Monroe.	1885
Poole, W. H.	Douglasville	Douglas	1894
Poore, J. J.	Monroe	Walton	1894
Powell, B. C	Villa Rica	Carroll.	1896
Powell, John F.	Kramer	Wilcox.	1893
Powell, T. O. (P.).	Milledgeville	Baldwin	1867
Prather, Wm. S.	Americus.	Sumter	1897
Purse, B. S.	Savannah.	Chatham.	1895
Purse, M. A	Atlanta	Fulton	1894
Quarterman, K. A	Walthourville	Liberty.	1885
Quillian, D. D.	Athens	Clarke.	1892
Quillian, H. P.	Arp.	Banks	1888
Quinn, C. T	Naylor	Lowndes	1893
Read, J. B.	Savannah	Chatham.	1851
Redding, Chas. D.	Lizella.	Bibb	1897
Redding, J. H	Waycross.	Ware.	1893
Reid, C. W.	Pelham	Mitchell	1897
Rhodes, P. M.	Taylorville.	Bartow.	1894
Richardson, C. H.	Montezuma.	Macon	1886
Richardson, E. H. (O., C., V.-P.)	Atlanta	Fulton.	1878
Ridley, F. M., (O., C., P.)	LaGrange	Troup	1887
Ridley, R. B	Atlanta.	Fulton	1887
Ripley, E. C	Barnesville.	Pike	1897
Roberts, J. B. (V.-P).	Atlanta.	Fulton	1875
Robinson, W. C	Atlanta.	Fulton	1897
Rogers, J. W.	Reynolds.	Taylor.	1897
Rogers, W. T.	Coleman.	Randolph	1893
Rome, W. J	Buford.	Gwinnett	1897
Roper, L. E	Lula	Hall	1894
Rose, Jno. R	Eastman.	Dodge	1897
Ross, James T	Macon.	Bibb	1891
Rosser, J. P.	Atlanta.	Fulton	1897
Roy, Dunbar	Atlanta.	Fulton.	1892
Roy, G. G	Atlanta.	Fulton.	1878

Name.	Post-office.	County.	Admitted.
Rudisill, B. F.	Forsyth	Monroe	1897
Rumble, S.	Goggins	Monroe	1891
Saunders, Jno. W.	Unadilla	Worth	1897
Scarborough, J. F.	Tippettville	Dooly	1883
Scott, H. F. (o.)	Atlanta	Fulton	1879
Selman, J. L.	Douglasville	Doug'as	1894
Sessoms, W. C.	Moultrie	Colquitt	1893
Sewell, J. R.	Walnut Hill	Franklin	1894
Shannon, John R.	Cabaniss	Monroe	1893
Shepard, Chas. C.	Macon	Bibb	1895
Shorter, James H.	Macon	Bibb	1893
Sibbett, W. F.	Douglas	Coffee	1890
Sims, E. H.	Columbus	Muscogee	1892
Sims, F. H.	Atlanta	Fulton	1897
Simmons, A. B	Savannah	Chatham	1891
Simpson, J. R.	Atlanta	Fulton	1894
Simpson, W. T.	Smithville	Lee	1892
Singleton, O. G.	Fort Valley	Houston	1892
Slack, Henry R.	LaGrange	Troup	1893
Smiley, J. M.	Atlanta	Fulton	1897
Smith, A. A. (V.-P., P.)	Hawkinsville	Pulaski	1875
Smith, B. F.	Elberton	Elbert	1893
Smith, C. D.	Atlanta	Fulton	1894
Smith, C. H.	Ellaville	Schley	1893
Smith, E. J.	Jefferson	Jackson	1897
Sorrells, R. P.	Danielsville	Madison	1887
Spears, W. T.	Rutledge	Morgan	1894
Spence, J. M., Jr.	Waresboro	Ware	1890
Spence, T. N. B.	Social Circle	Walton	1897
Standifer, W. B.	Blakely	Early	1886
Stapler, M. M	Macon	Bibb	1897
Stapleton, John L	Bronwood	Terrell	1897
Stephens, L. P	Atlanta	Fulton	1888
Stevens, V. P.	Putnam	Marion	1892
Stewart, J. F.	Griffin	Spalding	1892
Stewart, W. W	Columbus	Muscogee	1892
Stirling, A. W	Atlanta	Fulton	1896
Stockard, C. C.	Atlanta	Fulton	1896
Stone, George H.	Savannah	Chatham	1875
Story, J. W.	Dennard	Houston	1897
Story, Warren L	Sycamore	Irwin	1897
Stovall, C. T.	Vienna	Dooly	1897
Stovall, A. S. J.	Elberton	Elbert	1886
Stubbs, Geo. H.	Lithia Springs	Douglas	1897

Name.	Post-office.	County.	Admitted.
Sullivan, J. S.	Macon	Bibb	1893
Summey, Chas. L	Stone Mountain.	DeKalb	1897
Taliaferro, V. H	Atlanta.	Fulton.	1894
Tankersley, J. S.	Ellijay	Gilmer.	1894
Tarver, F. E	Augusta	Richmond	1891
Tate, William B. (V.-P.)	Tate.	Pickens	1890
Taylor A. P.	Thomasville	Thomas	1873
Taylor, R. H. (V.-P., S.)	Griffin.	Spalding	1879
Terrell, W. W	Douglass.	Terrell	1897
Terrell, E. B	Greenville	Meriwether.	1891
Terrell, W. W	Douglas	Coffee	1893
Terry, W. R.	Sycamore	Irwin	1897
Thomas, J. M.	Griffin	Spalding.	1894
Thompson, P. H	Bluffton	Clay.	1886
Thompson, Wm. L.	Pitts.	Wilcox	1897
Todd, J. S. (O., C., P.)	Atlanta.	Fulton.	1872
Trimble, G. C	East Point.	Fulton.	1891
Tucker, W B.	Chipley	Harris .	1897
Turner, W. J.	Ashburn.	Dooly	1897
Tyson, J. D.	Adrian.	Emanuel	1893
Van Goidtsnoven, E	Atlanta.	Fulton.	1887
VanHorne, J. T.	Monroe.	Walton	1892
Walker, J. L.	Waycross.	Ware	1882
Walker, T. D.	Cochran	Pulaski.	1897
Wallace, F. R	Cordele.	Dooly	1895
Ward, J. A	Richwood	Dooly	1897
Watson, G. B.	Acree	Worth	1897
Weaver, J. A.	Buena Vista	Marion.	1890
Weaver, J. D.	Eatonton.	Putnam	1894
Webb, C. S.	Atlanta.	Fulton.	1892
Webb, J. F	Monticello.	Jasper	1897
Westmoreland, W. F. (O., P.)	Atlanta.	Fulton.	1881
Westmoreland, J. W	Atlanta.	Fulton	1897
Whelchel, C. C	Comer.	Madison	1891
Whelchel, John E.	Gillsville.	Hall.	1891
Whipple, W. H	Macon .	Bibb	1897
Whitaker, J. M.	Milledgeville.	Baldwin	1883
Whitehead, A. G. (V.-P., P.)	Waynesboro	Burke	1861
Wilcox, G. A	Augusta	Richmond	1896
Wiley, R. C	Sparta .	Hancock .	1897
Wilkie, P. E	Colquitt	Miller	1897
Williams, W. J	Pembroke	Bryan	1897

Name.	Post-office.	County.	Admitted.
Williams, W. P.	Blackshear.	Pierce	1890
Williams, H. J.(o.)	Macon.	Bibb.	1880
Wills, T. J	Washington.	Wilkes	1889
Wimberly, John S	Sanford.	Stewart.	1891
Winchester, W. R	Macon.	Bibb.	1883
Wise, B. T	Plains	Sumter.	1893
Wolff, Bernard.	Atlanta.	Fulton.	1894
Wooten, Louis O	Unadilla.	Dooly	1897
Wright, Jas. B	Augusta	Richmond.	1896
Wright, Thos. R	Augusta	Richmond.	1880

NON-RESIDENTS.

Name.	Post-office.	State.	Admitted.
Gann, Dewell.	Benton	Arkansas	1887
Glass, J. M.	Opelika	Alabama.	1894
Mitchell, Thos. S.	Eufaula	Alabama.	1892
Perry, Thos. B.	U.S.M.H. Buffalo.	New York.	1891
Prather, W. B.	Seale.	Alabama.	1894

HONORARY LIST.

This list is designed for aged, retired, or infirm members of the Association, who are entitled to all the privileges of the Association without the payment of dues.

The Secretary would be obliged to members to report any names that should go on this list.

Name.	Post-office.	County.	Admitted.
Alexander, J. F. (P.,C.,V.-P.)	Atlanta	Fulton	1849
Battle, H. L.	Wadley	Jefferson.	1891
Bardwell, E. L.	Talbotton.	Talbot.	1872
Beasley, James A.	West Point.	Troup.	1849
Bell, A. A.	Madison	Morgan.	1858
Brawner, W. M.	Lexington	Oglethorpe.	1883
Calhoun, F. R. (V.-P.)	Cartersville.	Bartow	1873
Colding, C. H.	Savannah	Chatham.	1882
Coleman, J. T.	Perry.	Houston	1851
Dudley, M. J.	Sonoraville.	Gordon.	1880
Griggs, A. W. (O.,V.-P.,C.,P.)	West Point	Troup	1866
Hopkins, T. S.	Thomasville	Thomas	1865
Hoyt, W. D.	Rome	Floyd	1872
Love, Wm. A. (V.-P.)	Atlanta.	Fulton	1866
McDonald, C. M.	Leesburg.	Lee	1892
Smith, J. B.	Perry.	Houston.	1871

In Memoriam.

☞ Special Request to Every Member.—The Secretary *earnestly requests each member of the Association* to aid him *in filling* the blanks in the following Roll of Deceased Members *by making the necessary inquiries* in their respective cities and counties, *and writing him at once* on obtaining the desired information.

Name.	Post-office.	County.	Admitted.	Died.
Adams, C. B.	Augusta	Richmond	1868	1875
Alexander, J. R.	Cave Springs	Floyd	1849	
Alexander, L. B.	Forsyth	Monroe	1877	1891
Alfriend, E. W. (V.-P.)	Albany	Dougherty	1852	1886
Armstrong, W. S.	Atlanta	Fulton	1886	1896
Arnold, R. D. (V.-P., P.)	Savannah	Chatham	1849	1876
Ashworth, A. B. (S.)	Atlanta	Fulton	1887	1889
Avary, J. C.	Decatur	DeKalb	1859	1873
Baker, A. H.	Augusta	Richmond	1876	1891
Ballinger, M. R.	Floyd Springs	Floyd	1860	1886
Banks, J. T. (V.-P., P.)	Griffin	Spalding	1858	1880
Barkwell, T. J.	Hawkinsville	Pulaski	1859	
Barnett, J. W.	Raytown	Taliaferro	1880	1890
Battey, Robert (C., P.)	Rome	Floyd	1859	1895
Battle, H. L.	Russellville	Monroe	1849	
Bell, T. W.	Busbyville	Houston	1853	
Bignon, H. A.	Augusta	Richmond	1852	1870
Billing, S. A.	Columbus	Muscogee	1855	1872
Bizzell, W. D. (V.-P.)	Atlanta	Fulton	1882	1890
Black, R. C. (T.)	Augusta	Richmond	1852	1860
Bomar, B. F.	Atlanta	Fulton	1859	
Borcheim, L. E.	Atlanta	Fulton	1886	1887
Boswell, S. J. (V.-P.)	Columbus	Muscogee	1855	
Bothwell, D. J.	Vienna	Dooly	1849	
Bozeman, J. F.	Atlanta	Fulton	1855	1877
Boring, John M. (V.-P.)	Atlanta	Fulton	1856	1891
Brandon, D. S.	Thomasville	Thomas	1873	1878
Brantley, S. D.	Sandersville	Washingt'n	1849	1897
Broadhurst, W. W.	Augusta	Richmond	1852	1861
Brooks, C. A.	Americus	Sumter	1888	1894
Brown, S. E.	Eatonton	Putnam	1890	1896

Name.	Post-office.	County.	Admitted.	Died.
Bruce, R. J.	Thomasville	Thomas	1874	1878
Bunn, William	Wilna	Houston	1854	
Burgess, Wm. R. (T., O.)	Macon	Bibb	1870	1878
Burney, S. W. (P.)				1876
Campbell, Robert	Augusta	Richmond	1849	1885
Carroll, J. C.	Laurens Hill	Laurens	1857	1870
Carroll, R. C.	Augusta	Richmond	1873	1882
Carter, C. J.	Lake Park	Lowndes	1889	1893
Castlen, F. G.	Macon	Bibb	1867	1874
Carlton, J. M.	Athens	Clarke	1882	1883
Charlton, T. J. (C.)	Savannah	Chatham	1862	1886
Charters, W. M (P.)	Savannah	Chatham	1851	1883
Chase, D. S.	Augusta	Richmond	1862	
Cickey, D. C.	Macon	Bibb	1894	1896
Clark, S B.	Rich. Factory	Richmond	1852	
Campbell, H. F. (O., V.-P., P.)	Augusta	Richmond	1851	1892
Coe, J. N.	Flat Rock	Pike	1856	
Coleman, John S.	Augusta	Richmond	1891	1892
Colley, F. S. (P.)	Monroe	Walton	1856	
Cooper, G. F. (O., S., V. P.)	Americus	Sumter	1849	1882
Copeland, A. B.	Hamilton	Harris	1878	1882
Cornwall, G. H.	Hillsboro	Jasper	1854	
Crawford, S. S	Augusta	Richmond	1857	
Crump, E. D	Herndon	Burke	1872	1881
Cumming, H. M.	Augusta	Richmond	1862	1887
Cunningham, L. S.	Big Creek	Forsyth	1859	1862
Cunningham, W. D.	Jasper	Pickens	1859	1866
D'Alvigney, N	Atlanta	Fulton		1877
Davenport, C. W.	Point Peter	Oglethorpe	1852	
Davenport, H. S.	Calhoun	Gordon	1859	
Davis, W. L	Albany	Dougherty	1849	
Deadwyler, M. P. (V.-P.)	Elberton	Elbert	1868	1895
Dean, S. H.	Conyers	Rockdale	1856	
Dearing, W. E.	Augusta	Richmond	1852	1867
DeCortez, C. A.	Savannah	Chatham	1872	
Dickinson, J. T.	Albany	Dougherty	1857	
Dickinson, R. Q (V.-P., P.)	Albany	Dougherty	1850	
Dobbins, W. O.	Fort Gaines	Clay	1883	1890
Dugas, L. A. (P.)	Augusta	Richmond	1852	1884
Dupree, L. J.	Camilla	Mitchell		1890
Engram, R. G.	Montezuma	Macon	1881	1893
Eve, Joseph A.	Augusta	Richmond	1852	1886
Eve, S. C.	Augusta	Richmond	1868	1884

Name.	Post-office.	County.	Admitted.	Died.
Felder, W. L.	Augusta	Richmond	1857	1867
Fish, J. D (T.)	Savannah	Chatham	1875	1879
Fitzgerald, E.	Macon	Bibb	1882	1885
Ford, L. D. (P.)	Augusta	Richmond	1849	1884
Fort, Moses T	Hawkinsville	Pulaski	1859	1878
Freeman, S. H.	Dacula	Gwinnett	1891	1897
Franklin, M. A.	Macon	Bibb	1849	1858
Frazier, W. M.	Hawkinsville	Pulaski	1850	
Gaither, Henry	Oxford	Newton	1851	1890
Gaither, B. T.	Oxford	Newton	1852	1853
Gardner, J. W	Augusta	Richmond	1857	
Girardy, Edward	Augusta	Richmond	1852	1859
Gordon, J. M.	Savannah	Chatham	1849	
Gray, Jas. A. S.	Atlanta	Fulton	1882	1887
Gray, S. H.	Barnesville	Pike	1871	1885
Green, A. B.	Pond Town	Sumter	1849	
Green, H. K	Macon	Bibb	1849	1867
Green, Thomas F.	Milledgeville	Baldwin	1849	1879
Gregory, J. D.		Sumter	1849	
Griffin, C. F	Cassville	Bartow	1888	1893
Griggs, R. E.	Columbus	Muscogee	1892	1897
Grimes, T. W.	Columbus	Muscogee	1855	1882
Habersham, J. C	Savannah	Chatham	1853	
Habersham, J.C., Jr. (V.-P)	Savannah	Chatham	1866	1881
Habersham, S. E.	Eatonton	Putnam	1870	
Hallum, J. W.	Carrollton	Carroll	1891	1895
Hammond, D. W. (V.-P., C.)	Macon	Bibb	1857	1887
Harden, W. P.	Harmony Grove	Jackson	1852	1885
Harrell, W. J.	Bainbridge	Decatur	1874	1881
Harris, S. N. (V.-P.)	Savannah	Chatham	1851	1854
Harris, N. O	Atlanta	Fulton	1887	1896
Harris, Juriah (o., V.-P.)	Savannah	Chatham	1852	1876
Harrison, Gabriel	Macon	Bibb		1862
Hart, A. C.	Waynesboro	Burke	1852	
Hatch, Milo G. (c.)	Tennille	Washingt'n	1883	1897
Hatchett, J. M.	Fort Gaines	Clay	1892	1892
Havis, M. W.	Perry	Houston	1854	1890
Hawes, E. C.	Appling	Columbia	1852	
Hawkins, S. B.	Americus	Sumter	1871	1892
Heard, T. O.	Griffin	Spalding	1867	
Hendrick, J. B	Covington	Newton	1857	1881
Henry, G. C	West Point	Troup	1872	
Hook, E. B.	Augusta	Richmond	1857	1862
Houston, J. P. R.	Savannah	Chatham	1873	1892

Name.	Post-office.	County.	Admitted.	Died.
Hoxey, Thomas	Columbus	Muscogee	1849	1853
Hollingsworth, W. T	Madison	Morgan	1857	1893
Holmes, G. W. (V.P. P.A.C.)	Rome	Floyd	1867	1890
Holmes, T. M. (o.)	Rome	Floyd	1883	1891
Hamilton, J. L	Stone Mountain	DeKalb	1859	1890
Hunter, E. H. W.	Louisville	Jefferson	1857	1883
Ingraham, E. P.	Albany	Dougherty	1870	1873
Irvine, Robert	Augusta	Richmond	1880	1881
Johnson, C. W	Macon	Bibb	1870	1875
Johnson, John M.	Atlanta	Fulton	1866	1886
Jones, B. O	Atlanta	Fulton		
Jones, J. W.	Atlanta	Fulton	1857	1871
Kennedy, L. P.	Atlanta	Fulton	1870	1892
Kennebrew, Henry	Athens	Clarke	1883	1886
Kirkscey, E. J. (V. P.)	Columbus	Muscogee	1871	1877
Kollock, P. M. (P.)	Savannah	Chatham	1852	1872
Lamar, T. R. (V.-P.)	Macon	Bibb	1849	1859
Lackhart, R. H.	Columbus	Muscogee	1855	1859
Lattimer, C. T	Macon	Bibb	1889	1889
Lawrence, L. L	Blountsville	Jones	1889	1890
Leitner, C. B	Columbus	Muscogee	1852	1897
Lightfoot, W. S.	Macon	Bibb	1849	1864
Long, Crawford W	Athens	Clarke	1849	1878
Logan, J. P. (P.)	Atlanta	Fulton	1858	1891
Lumpkin, George	Maxey's Depot	Oglethorpe	1859	
Lumpkin, S. P	Watkinsville	Clarke	1859	
Mackie, J. D	Augusta	Richmond	1852	1854
Maffit, R. G. W.	Dalton	Whitfield	1859	
Matthews, W. B.	Fort Valley	Houston	1884	1885
McBride, W. G.	Oconee	Washingt'n.	1850	1873
McDowell, J. M.	Barnesville	Pike	1887	1891
McGolrick, R.	Macon	Bibb	1849	1853
McKinley, C. A.	Newnan	Coweta	1859	
McMillen, J. E.	Columbus	Muscogee	1872	1883
Means, A. (V.-P.)	Oxford	Newton	1851	1883
Means, O. S.	Oxford	Newton	1857	
Meiere, Wm. S	Madison	Morgan	1857	
Milam, R. J.	Fairburn	Campbell	1882	1882
Miller, H. V. M.	Atlanta	Fulton	1851	1896
Morrison, D. H.	Savannah	Chatham	1868	1869
Musgrove, W. C. (C., S.)	Midville	Burke	1849	1876
Nash, R. A.	Marion	Twiggs	1849	

Name.	Post-office	County.	Admitted.	Died.
Nisbet, R. H	Eatonton	Putnam	1854	1873
Noell, S. G	Ypsilanti	Talbot	1892	1892
Nottingham, C. B. (S.T.C.P)	Macon	Bibb	1849	1875
Nunn, R. M.	Savannah	Chatham	1871	1873
Ogilby, H. J. (V.-P.)	Madison	Morgan	1849	1873
O'Keefe, D. C. (S.)	Atlanta	Fulton	1852	1871
Orme, L. H. (S.)	Atlanta	Fulton	1866	1872
O'Sullivan, ——	Cork	Lee	1849	
Owen, J. D.		Baldwin	1850	
Parsons, J. M.	Russellville	Monroe	1845	
Pitts, G. W.	Star	Butts	1859	
Posey, J. F.	Savannah	Chatham	1851	
Powell, T. S. (V.-P.)	Atlanta	Fulton	1857	1896
Pringle, W.	Covington	Newton*		
Ragan, Isham H	Palmyra	Lee	1856	
Raines, Thomas	Atlanta	Fulton	1872	1883
Raines, T. L.	Atlanta	Fulton	1882	1884
Rauschenberg, Christian	Atlanta	Fulton	1861	1878
Richardson, C. P.	Savannah	Chatham	1851	1853
Ridley, R. A. T. (V.-P.)	LaGrange	Troup	1859	1871
Robertson, J. J.	Washington	Wilkes	1852	1872
Roddy, R. L. (V.-P.)	Forsyth	Monroe	1849	1878
Ruffin, W. R.	Augusta	Richmond	1852	
Russell, W. J.	Lawrenceville	Gwinnett	1861	
Ryan, T. D. L.	Hawkinsville	Pulaski	1859	1876
Stafford, S. J.	Madison	Morgan	1856	1859
Searcy, D. B	Bolingbroke	Monroe	1849	1885
Shropshire, J. W.			1871	
Simmons, J. N	Atlanta	Fulton	1850	1871
Simmons, J. S	Gainesville	Hall	1873	1881
Simmons, S. B	Augusta	Richmond	1852	1867
Simmons, T. A.	Irwinton	Wilkinson	1871	1871
Slaughter, J. T.	Villa Rica		1851	1889
Smith, A. D.	Montezuma	Macon	1871	
Smith, C. W.	Jonesboro	Clayton	1859	
Smith, Hiram	Augusta	Richmond	1876	1888
Smith, H. H	Augusta	Richmond	1886	1887
Smith, R. M. (C.)	Athens	Clarke		1879
Smith, Thos.	Savannah	Chatham	1858	1876
Spier, W. A.	Grantville	Coweta	1859	
Stallings, J. D.	Preston	Webster	1871	
Stanford, F. A.	Columbus	Muscogee	1849	1885

Name.	Post-office.	County.	Admitted.	Died.
Starr, E. P.	Savannah	Chatham	1868	1873
Steele, H.	Knoxville	Crawford	1849	
Steele, R. T.	Fairburn	Campbell	1849	
Steiner, H. H.	Augusta	Richmond	1857	1892
Stephens, W. B.	Forsyth	Monroe	1849	
Sterling, W. L.	Atlanta	Fulton	1878	1894
Stewardson, Thos.	Savannah	Chatham	1849	
Stovall, G. M.	Elberton	Elbert	1894	1894
Stozier, L. L.	Albany	Dougherty	1867	
Strother, W. A.	Albany	Dougherty	1867	1896
Sutton, C. B.		Lee	1856	
Taliaferro, V. H. (V.-P.)	Atlanta	Fulton	1857	1887
Taylor, E. T.	Columbus	Muscogee	1855	
Taylor, J. P.	Haralson	Coweta	1859	1897
Taylor, R. N.	Hawkinsville	Pulaski	1850	
Thomas, J. G. (V.-P., P., C., T.)	Savannah	Chatham	1867	1885
Thompson, Chas.	Macon	Bibb	1849	1854
Trammell, A. A.	Forsyth	Monroe	1856	
Tucker, O. W.	Brunswick	Glynn	1890	1891
Underwood, J. B.	Cave Spring	Floyd	1860	1881
Van Meter, J. N.	Euharlee	Bartow	1879	1881
Wall, W. W.	Calhoun	Gordon	1860	
Walker, T. F.	Cochran	Pulaski	1859	1888
Walker, F.	Macon	Bibb	1889	1891
Ware, A. E. O.			1859	
Waring, J. J.	Savannah	Chatham	1853	1888
Watson, W. A.	Jefferson	Jackson	1883	1889
Wells, C. H.	Savannah	Chatham	1853	1854
Wells, W. B.	Chattanooga	Tennessee	1873	1891
West, Chas. (P.)	Perry	Houston	1849	
West, C. W.	Savannah	Chatham	1853	1859
Westmoreland, W. F. (P.)	Atlanta	Fulton	1856	1890
Wethington, R. T.	Thomasville	Thomas	1884	1887
White, S. G. (V.-P.)	Milledgeville	Baldwin	1868	1877
Whitlock, Isaac W.	Washington	Wilkes	1852	1853
Wile, Henry	Atlanta	Fulton	1886	1887
Wiley, J. B.	Macon	Bibb	1849	
Williams, T. L.		Dooly	1849	
Williams, W. L.	Fayetteville	Fayette	1873	
Willingham, Willis	Lexington	Oglethorpe	1849	1872
Winchester, E. A.	DeSoto	Sumter	1893	1897
Winn, G. A.	Bolingbroke	Monroe	1849	1862

Name.	Post-office.	County.	Admitted.	Died.
Wirsen, G. F.	Rutledge	Morgan	1871	1884
Woodson, C. T.	Wilna	Houston	1854	
Wooten, W. H	Lexington	Oglethorpe	1852	1860
Word, T. J.	Rome	Floyd	1887	1890
Word, R. C.	Atlanta	Fulton	1855	1890
Wragg, J. A	Savannah	Chatham	1853	
Wright, P. H.	Macon	Bibb	1869	1888
Yonge, Easton	Savannah	Chatham	1880	

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